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Texas Company Sells Central Petroleum To Union Oil Co. Of Delaware

Staff Special
TULSA, July 26

ONE of the most important transactions in the history of the Mid-Continent oil fields is the consummation of a deal whereby Union Oil Company of Delaware has acquired control of Central Petroleum Company from the Texas Company, thru the purchase of the latter's contract.

While the terms of the deal have not been announced, its extent is indicated by the announcement of Union Oil Company that the properties involved comprise more than 4,000 barrels daily production net; 30 drilling wells, of which 27 are in the Hewitt field, one in Osage county and two in other counties; 943 producing wells, more than 27,000 acres under lease, of which 26,000 are in Oklahoma and 1,320 in Kansas; 13,200 acres of the total in Oklahoma being undeveloped. The company also owns and operates four casinghead plants with a daily output of 15,000 to 20,000 gallons.

Asked for an expression concerning the acquisition of the properties, C. H. Schlacks, president of the Union Oil Company, wired the following statement:

"Acquisition by the Union Oil Company of control of the Central Petroleum Company is an outright purchase for cash from the Texas Company. The Central Petroleum is the holding company for one of the largest and most valuable oil producing properties in Oklahoma, and this purchase establishes Union Oil as one of the foremost producers in that field."

While the Central Petroleum Company has existed as a separate entity and has been operated under contract with the Texas Company, its president is E. C. Lufkin, chairman of the executive committee of the Texas Company. D. F. Connolly is vice president and general manager, and A. C. Miglietta is secretary. Branch offices are maintained at the Texas Company's New York office, 17 Battery Place, with main offices in Tulsa.

The sale of the contract is interpreted by officials of the larger companies operating in the Mid-Continent to mean that the Texas Company has a surplus of crude oil. Its Tulsa refinery is now running at capacity as is the Port Arthur plant. Recently it has offered a large amount of crude in storage at Cushing to refiners. The Texas Company's operations in the producing end have been unusually successful, with the exception of the Osage development. In north Texas, where so many companies either failed to make profits or actually sustained losses, the Texas Company's operations have been characterized by that degree of conservatism which brought success.

Think Good Profit Involved

Apparently Union Oil Company paid a stiff price, affording the Texas Company the opportunity to make a handsome profit. This, coupled with excessive drilling costs which has caused all companies to retrench sharply, is believed to be the determining factor. The Texas Company's drilling success in the Chinampa district of Mexico may assure its Port Arthur refinery of an adequate supply of crude.

Union Oil Company of Delaware is the holding company for Union Oil Company, of California; Columbia Oil Producing Company and Commonwealth Petroleum Company, and it is understood that pending the reorganization, Union Oil Company of Delaware will be the holding company for Central Petroleum Company and Eddystone Oil Company, a new branch of the Delaware company, which recently entered the Mid-Continent. The latter company has established Tulsa offices, but has not obtained any production as yet.

Another newcomer in the Mid-Continent is the National Exploration Company, which is connected with Union Oil Company of California, and which has been very active recently in the purchase of acreage, including a valuable tract near Kelleyville from the Texas Company.

The entry of Union Oil Company on a large scale is taken as evidence that the company realizes the necessity of fortifying itself with a large domestic supply of high-grade gasoline content crude, as its subsidiary, Union Oil Company of California, is buying large quantities of gasoline in the Mid-Continent to supplement its California output and prevent further drain on its stocks.

Central Petroleum Company is a holding company for Wolverine Oil Company, Appelton Osage Oil Company, Carnegie Oil Company, Como Oil Company, Copan Oil Company, Fort Pitt Oil Company, Galena Oil Company, Leader Oil & Gas Company, Leola Oil Company, Lucknow Oil Company, Knox Oil Company, Lumberman's Oil & Gas Company, Mohawk Oil Company, Pickwick Oil Company, Roth-Argue-Maire Brothers Oil Company, St. Lawrence Oil Co., Sachem Oil Company, Sagamore Oil & Gas Company, Stevens Point Oil Company, Waukesha Oil Company, Wigwam Oil Company and Niagara Oil Company.

With the exception of Wolverine Oil Company, one of the important producing companies in the Mid-Continent which is capitalized at $1,423,175, each of the other companies is capitalized at $100,000.

Central Petroleum Company was incorporated August 4, 1913, in Maine, and succeeded the Central Fuel Company, which several years ago was the holding company for about forty companies controlled by George D. Priestly, of Bartlesville. By the terms of a contract entered into between the

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Central Fuel Company and the Texas Company, June 30, 1910, the Texas Company agreed to purchase and the Central Fuel Company to deliver, 20,000 barrels of crude oil daily, with provisions for payment and storage.

Loaned Texas Company Money

Central Fuel Company, under this contract, agreed to pay Texas Company $70,000 monthly as expenses of operating and agreed to loan Texas Company $3,000,000 on the latter's bonds.

When some of the terms became impossible of fulfillment, chiefly the crude oil quantity clause, and after a number of legal contests, an agreement was reached whereby the Texas Company took over the operations of Central Fuel Company's holdings and guaranteed the interest on Central Fuel Company's bonds. The latter then was reorganized as Central Petroleum Company under provisions giving the Texas Company the option of purchase of $6,000,000 preferred stock, carrying with it $600,000 common, for $6,000,000 cash. Texas Company was to manage and defray the cost of operation of producing properties for the annual payment of $72,000 and the Texas Company was to have the option to purchase all Central Petroleum Company production during the life of the contract, the date of expiration of which was 1923.

The bonds of Central Petroleum Company were retired in October, 1919. Dividends on Central Petroleum stock was at the rate of 5 per cent for 10 years from May 1, 1913, with the contingency that certain leases on Osage Indian lands should be continued. All preferred and part of the common stock which had been distributed to bondholders was held in 10-year voting trust, expiring April 30, 1923, with Samuel Untermeyer, Philip Lehman and E. H. Clark the voting trustees.

Public Utilities Threatened By Navy's Arbitrary Demand For Oil On Pacific

BULLETIN

WASHINGTON, July 26.—Commander Hilton today said the navy would continue to obtain fuel oil on the Pacific coast by the methods which it has been using. He said the bids received on July 17 had not been opened. Therefore, until they had been fully considered in the light of recommendations by officers stationed on the west coast, there could be no change of policy.

LOS ANGELES, July 26.—The shutdown of the street car system, lighting plant and other public utilities of San Diego is threatened by the latest demand of the navy department for fuel oil there.

At the end of last week the navy officers served a demand on the Union Oil Company for delivery of 25,000 barrels of fuel oil at San Diego immediately, with a notice attached to the demand that the power of seizure lies with the department. The price offered was $1.72, the tentative figure established arbitrarily by the navy department.

The company officials replied that its tanks at San Diego are empty, that it has no oil available and no transportation facilities beyond those absolutely necessary to fulfill its commercial contracts. The supply of oil for the use of the San Diego public utilities is so low that a barge load of oil must be delivered within a week or the tanks will be dry and the city without car service, light or water. The Union supplies the oil for the city.

If the navy insists on getting the oil at San Diego either it must seize the barge load of oil coming for the city of San Diego, send a tanker of its own to San Francisco or Los Angeles and load it for San Diego or seize a tanker from the oil company. Since the reply of the company was received the navy has made no further move.

The Union Oil Company is standing pat on its declaration recently made that if the officers send detachments ashore to seize the oil, it will withdraw all employes and leave it to the navy men to find the proper tanks and lines and get the oil, also throwing upon the department the responsibility for any damage that may be done in the process.

At San Francisco four destroyers today lined up at Associated Refinery & Pipe Line terminal at Avon, demanded 150,000 gallons at navy price, which the company furnished under protest. The Associated is the only company making no bid on the ground that it has no oil available. The demand was made despite the statement repeated by Admiral Jayne, district commander, that none would be made until sanctioned by the attorney general and in the face of orders sent United States Attorney Silva to report upon situation before action would be taken by the department of justice. Officers said that the whole matter had been put up to Washington.

Back in 1917 five oil companies offered the navy oil at $1.40, the same price for all. Immediately official Washington shouted there was a combine to hold up prices. Companies except the Associated have just submitted bids varying from $2.04 for the Standard to $2.35 for the Shell, and there comes a strong official hint to get together on prices for Uncle Sam. The companies are likely to reply that the law forbids and the department of justice is on close guard.

Meanwhile Mare Island Navy Yard has less than a week's supply and only the arrival of naval tanker Kanawha, from Honolulu with 1,000 barrels in its bunkers enabled three destroyers to get away for San Diego.

For the next six months the bids cover but 75 per cent of the navy's estimated demands.

As against the price of $1.72 offered by the navy, General Petroleum now quotes fuel oil at Los Angeles $2.10; Seattle, $2.47; Union, Seattle and Portland, $2.35; Standard, $2.25; Shell, San Francisco, $2.35; Union, Standard, Associated, Los Angeles and San Francisco, $2.00; Diesel engine oil, Los Angeles and San Francisco, Standard, $2.94; Union, $3.00.

Shipping Board Makes Deal For Oil On Coas

By Special Correspondent

WASHINGTON, July 26.—Admira Benson's technical advisers have to him that, in their opinion, it would be waste of the Shipping Board's time fo it to enter into any arrangement wit any of the bidders at the recent can vass of tenders for furnishing fuel o for the merchant marine who offere to go into the oil business if the gov ernment would aid in financing the operations.

These Shipping Board advisers be lieve the board ultimately will have t deal with the oil companies on the giv and take plan. They believe they save the situation on the Pacific coast, s far as the merchant marine is con cerned, thru an arrangement with the Midwest and the Standard of California Under that arrangement, it has been unofficially asserted, the Midwest ob tains from the Shipping Board the 500,000 barrels of crude from the Wyoming public lands that come into the possession of the board from the Wyoming field. Under the arrangement the Midwest obtains the crude for refining in Wyoming, while the board obtains fuel oil on the coast in exchange with the Standard of California. The latter makes a trade with the Midwest so the cost of transporting the Wyoming crude is obviated.

The exact terms of this triangular trade have never been revealed. Unofficially it has been intimated that the Shipping Board is obtaining about 70 barrels of fuel oil for each 50 barrels of crude.

Intimations at the time the bids for fuel oil were opened, that the board would immediately get into touch with producers in Mexico with a view to there finding the solution for the unsatisfactory situation have not been turned into realizations, so far as is now discernible. If the board has sent out emissaries to work on the problem from that angle, they have been successfully moved under a smoke screen of some kind.

At the time this was written the subject had not become a question of where and how to obtain the fuel oil, but it was approaching that stage. On the surface it was a question of price, the assumption being that if the government was willing to pay the price the fuel oil would be forthcoming. The board members, so far as the public was concerned, were treating it as a matter of price. The bids, however, did not give it that complexion. They did not cover quantities great enough to meet the requirements, at definite prices. The quantities mentioned by bidders who were asking the government to finance them, taken at their maximum, barely met the requirement figures.

The situation seemed to be this: The large units in the industry had declined to bid on the large quantity requirements of the board. They confined their bidding to small quantities for deliveries at ports easiest of access, as if they were willing to supply fuel oil at those places as an incident to their business and not as one of the main parts of their programs.

Work Out New Blend In Evolution Of Casinghead Industry

By J. B. Gambrell Jr.

THE evolution of the casinghead gasoline industry in which several of the leading casinghead operators of the Mid-Continent are taking an active part, marks an important step toward increasing the supply of motor fuel. While the Tidal Gasoline Company probably has taken the longest strides in linking up the refinery with the casinghead plant, other companies, including Chestnut & Smith, Waite Phillips and the Highway Refining Company, Charles F. Noble and others have been working for some time along similar lines.

It was thru the courtesy of the Tidal Gasoline Company and Walter Miller, consulting refinery engineer of this company, that the practical discussion and the charts in this article were made available to the industry.

Mr. Miller was, for a number of years, connected with the Tidewater Oil Company at its eastern refinery and more recently was refinery manager of Cosden & Company.—Editor.

TULSA, July 22

CASINGHEAD manufacturers of the more forward looking type have realized for some time that the withdrawal of the Standard Oil Company of Indiana from the market for kerosene-casinghead blend precipitated a situation that necessitates a radical readjustment of the fundamentals upon which this industry has been functioning. They now see the shortsightedness of basing their business upon what proved to be only the temporary requirements of one purchaser, even as dominating a factor as the Standard Oil Company of Indiana.

By careful study of the situation and many experiments, several of these leading casinghead manufacturers have decided that the solution lies in a close linking up of the refinery with the casinghead plant, a refinery operated with the chief aim of providing suitable blending material, and the blending of the casinghead gasoline with a straight-run gasoline.

Research and experiments have demonstrated to these companies that the casinghead-straight run gasoline blend is far superior to the casinghead-kerosene blend, which has proven unsatisfactory to the consumer and to the casinghead-naptha blend which for some years has been marketed thru the jobber with success, as a motor fuel. This blend it is now impossible to make in quantity because of the scarcity of naptha, due to the fact that the refiner, urged by the demand for gasoline, is making a deeper gasoline cut in his crude.

In the early days of the casinghead industry it was discovered that casinghead gasoline in the raw state was not serviceable as motor fuel and several of the pioneer manufacturers developed the idea of blending their product with naptha which enabled them to market their product direct to the jobber. This practice proved to be the first successful utilization of casinghead gasoline as a motor fuel.

With the development of the cracking process by the Standard Oil Company of Indiana, they commenced to use large quantities of casinghead in conjunction with their refinery products.

However, shipping casinghead in the raw state had a number of disadvantages which the Standard overcame by buying it in a kerosene blend and for several years they re-distilled a large part of this kerosene blend directly in their pressure stills in connection with the regular cracking of gas oils.

Blending With Fuel Oil

A further extension of the same principle involved the blending of casinghead with fuel oil and shipping the blended product to refineries for re-running. This enabled the refinery, in addition to transporting their casinghead under fairly advantageous conditions, to treat the fuel oil more or less as a heavy crude by running it down to at least a very heavy residue

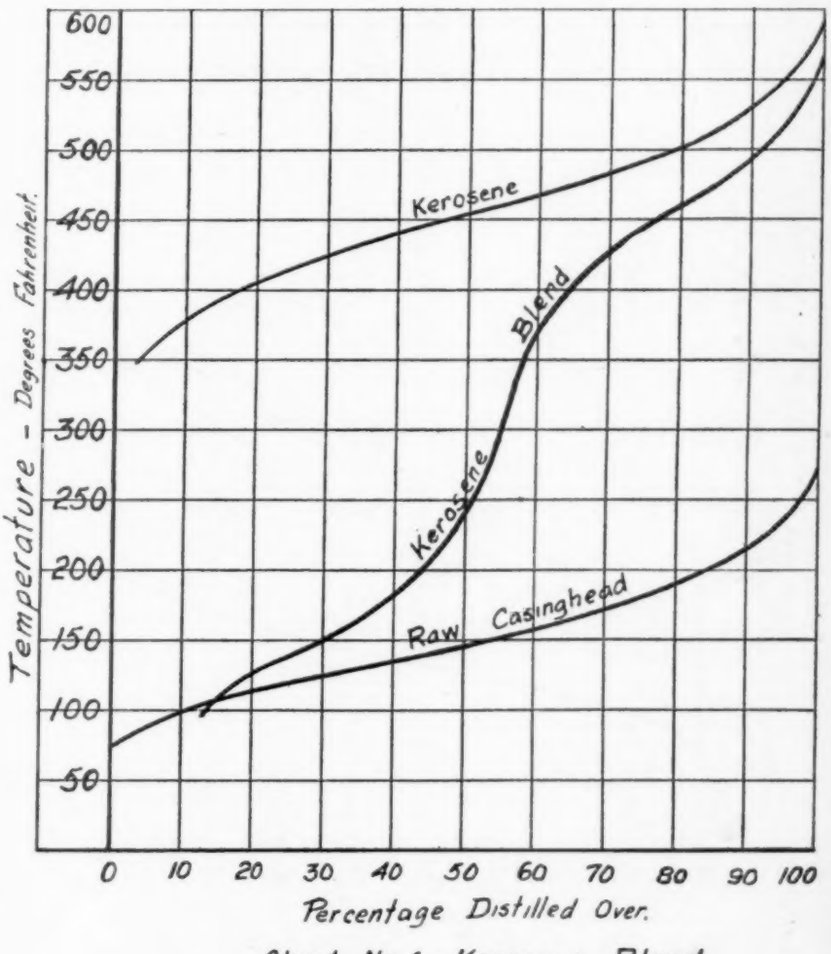

Chart No. 1 - Kerosene Blend.

ing oils and waxes (as well as gas oils suitable for cracking) which the skimming plant was unable to take out.

During the time that kerosene and fuel oil blends were being taken by the Standard, a considerable quantity of casinghead was also being blended with naptha and marketed to the trade.

Most of the large Independent refiners having casinghead production long ago adopted and followed the policy of marketing practically all of their casinghead product with straight run gasoline. Of course, the production of casinghead by these companies was but a slight per cent of the amount of straight run refinery gasoline manufactured by them and the use of casing-

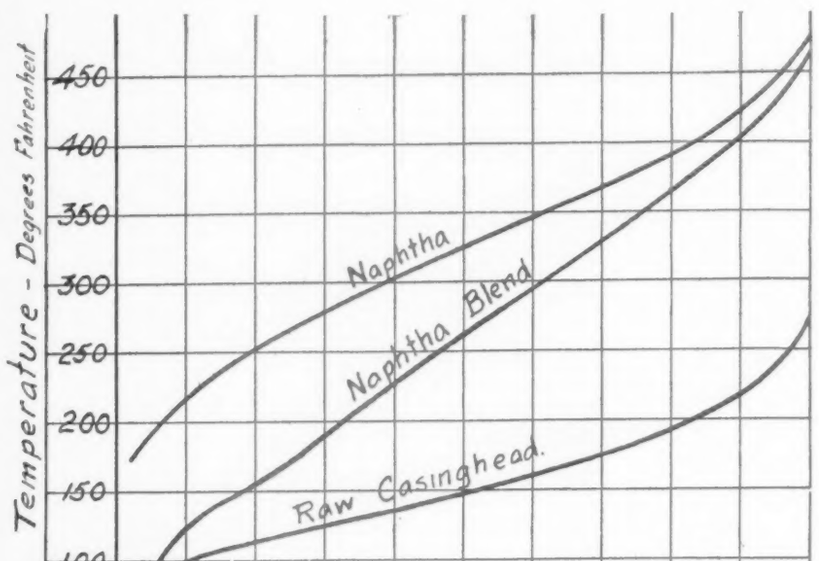

Chart No. 2 - Naphtha Blend.

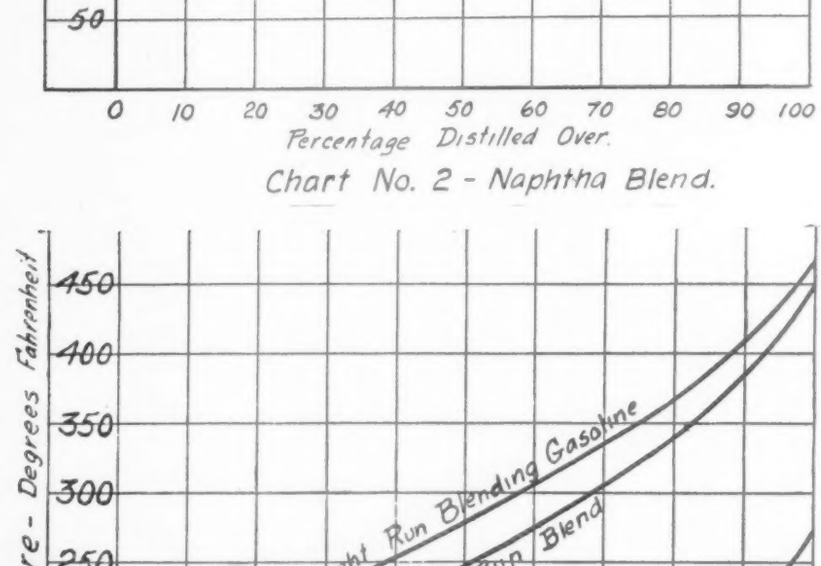

Chart No 3.- Straight Run Blend.

head gasoline was more or less incidental.

From early summer, 1919, the Standard, which was practically the only large purchaser of kerosene and fuel oil blends for re-running, began to take these products in smaller quantities and about November, 1919, made the definite announcement that they were no longer in the market for these blends. At that time, altho practically out of the market, they issued to the trade a new set of specifications up to which all raw casinghead gasoline must measure.

They further announced that any casinghead gasoline purchased by them would be at the current market price for raw casinghead and would not be determined by the price of gasoline as shown by the Chicago tank wagon market. This stand, taken by the Standard, placed the casinghead manufacturer where he was forced to take, roughly, 14 to 17 cents for his product where heretofore, by blending, he had been able to get practically the Chicago tank wagon price for his casinghead gasoline and in many cases, a higher price.

California Market Impractical

The withdrawal of the chief purchaser of these blends left the casinghead manufacturer who had been disposing of his product thru this channel, practically without a market and with but scant facilities for establishing one. The manufacturer, with no marketing organization whatever, cast about for an outlet for his product. In several intsances it was undertaken to market the raw product in California, but the great outage and excessive freight rates prevented it from becoming a commercial success.

Such manufacturers as were fortunate enough to obtain it, blended their product with naptha, but the demand for this product shortly made it extremely scarce and correspondingly high priced. Others undertook to market the kerosene blend to the jobbers as a straight motor fuel, but this blend failed to successfully compete with straight run gasoline and resulted in more or less complaint from the consumer.

Among the larger producers of casinghead gasoline in the Mid-Continent field is the Tidal Gasoline Company, subsidiary of the Tidal Oil Company, which in turn is the producing subsidiary of the Tide Water Oil Company. The Tidal had, to a very great extent, disposed of its product in the form of heavy blends thru the channel mentioned above and was, therefore, in the same position as the majority of the casinghead manufacturers. A survey of the requirements of the consumer, the characteristics of casinghead gasoline, and the available blending material, convinced the management that a drastic readjustment of the fundamentals under which the industry had been functioning was necessary under the new conditions.

The results of this survey by the management of the Tidal Gasoline Company may be summarized as follows:

1. That the casinghead industry could not depend for their outlet upon

the market created by a few large refining companies.

2. That marketing of the raw product as such to jobbers and distributors with the idea of the latter blending it was obviously impractical, as the average jobber had neither adequate facilities nor experience for properly blending this product. The element of danger in handling raw casinghead indiscriminately also constituted a serious drawback to this method of distribution.

3. That fuel oil blend was out of the question as not being a finished product but merely a means of transportation.

4. That experience in marketing the product as a kerosene blend had proven more or less unsatisfactory to the consumer and could not be relied upon for building up a satisfactory and permanent trade relationship.

5. That the ordinary naptha blend, altho more satisfactory than kerosene blend and fairly usable as a motor fuel, still had some disadvantages when compared with straight run gasoline. The difference in distillation characteristics between the ordinary naptha and casinghead gasoline was too great to make as homogeneous a product as straight run gasoline, and homogeneity is an essential characteristic of the ideal motor fuel. This lack of homogeneity, aggravated by the necessity of adding large proportions of casinghead to a comparatively heavy gravity naptha also increased losses in transportation and in the storage tanks of the jobbers and retailers.

Straight Run Gasoline Blend

With the foregoing in mind, it became apparent that some other method must be devised for the successful utilization of raw casinghead. It was decided, therefore, that instead of blending the casinghead gasoline with some refinery by-product, it should be added to straight run gasoline in the proper proportion to preserve the essential distillation requirements of an ideal motor fuel.

The accompanying charts are representative examples of the hundreds of distillation tests made in working out the problem. Each curve is the plotted result of an actual distillation test made by practical men of the Tidal Gasoline organization for the **National Petroleum News.**

Chart No. 1, "Kerosene Blend." This shows the curves for the kerosene and the raw casinghead, as well as the blended product. In this and the following charts, the curve for the raw casinghead has been expanded to cover the full 100 per cent for purposes of better comparison. The distillation of the raw casinghead actually showed a loss of 24 per cent, which is not unusual.

It will be noted that the temperature equivalent to the end point of the casinghead is reached on the curve of the blended material considerably before the initial boiling point of the kerosene. The result of such extreme divergence between the products is characteristically shown in the curve of the blend. The first part of the curve indicates that the casinghead practically all evaporated at its own normal

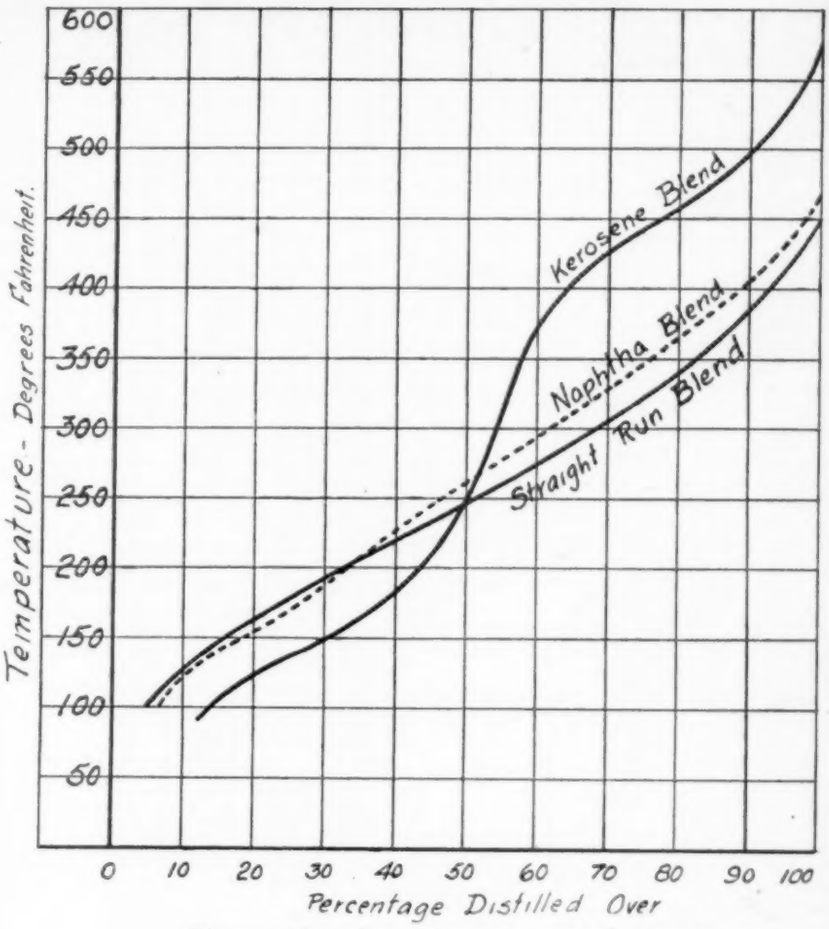

Chart No. 4 - Comparison of Kerosene and Naphtha Blends with Straight Run Blend

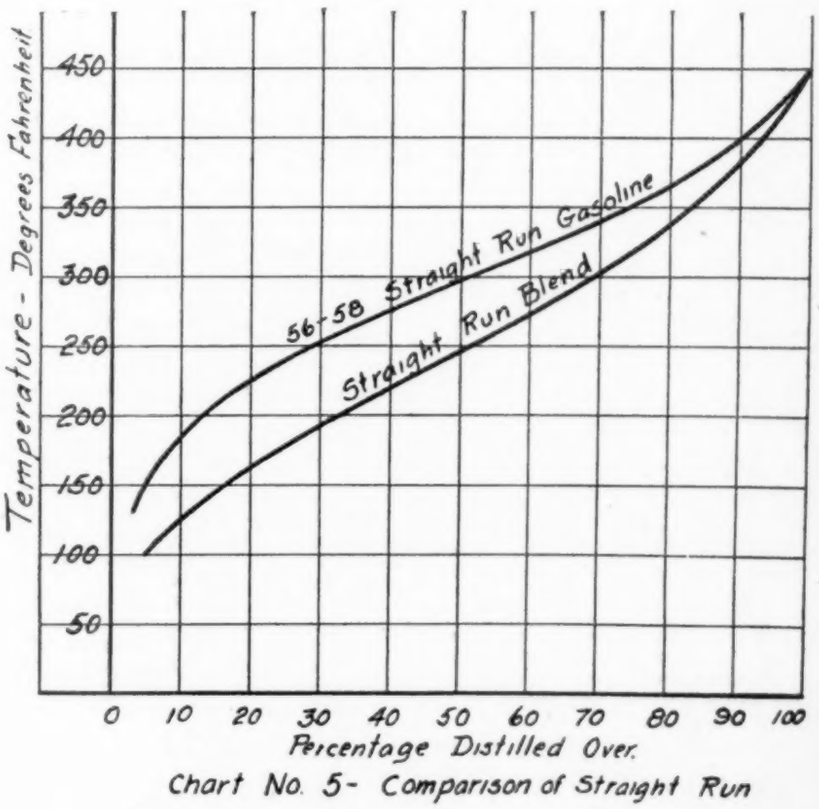

Chart No. 5- Comparison of Straight Run Blend with 56-58 Straight Run Gasoline.

boiling point and only after a very abrupt rise in temperature does any appreciable percentage of the kerosene boil off.

This substantiates the experience had in loading, shipping, storing and using such a product. The manufacturer has often felt that claims of outage made by consignees have been excessive and unfair, but he was in no position to dispute them, knowing as he did, the volatile nature of a large percentage of the product. This, coupled with complaints from, and dissatisfaction on the part of the user, due to unsatisfactory vaporization in the carburetor and losses by evaporation, leaving a heavy residue in the feed tank, makes it impractical to consider this a satisfactory and consistent fuel for passenger cars.

Chart No. 2, "Naptha Blend." The curve of this blended product shows a great improvement over that of the kerosene and results in a reasonably satisfactory motor fuel. In comparison with an ideal curve, however, this still leaves something to be desired. The proportion of intermediates, that is to say the percentage boiling between 200 temperature and 350, is somewhat smaller than is desirable. This, of course, is quite to be expected, inasmuch as naptha is really a refinery by-product of the manufacture of straight run gasoline and kerosene. A greater drawback to the general use of naptha as a blending material, however, is the lack of dependable supply. With the comparatively higher end points at which straight run gasoline is being manufactured, the available naptha content of crude oil has been cut to such a degree that there is not nearly enough to be had for the large quantity of casinghead gasoline being recovered today. It is very apparent that the constantly increasing output of casinghead and the constantly decreasing production of naptha will make this source of blending material less dependable from year to year.

Chart No. 3, "Straight Run Blend." The blending material used in this case was a specially distilled straight run gasoline of 55 degrees gravity, obtained from the Tidal Gasoline Refinery No. 2. The average boiling points are somewhat higher than the general run of 56-58 gasoline being marketed by the Independent refiners of the Mid-Continent field. This was blended to 60-61 gravity in the proportions of approximately 75 per cent of blending material and 25 per cent of casinghead. The resulting distillation curve shows what is believed to be an ideal motor fuel. The initial is low enough for all practical purposes for any season of the year and in any climate. The percentage of intermediates is such as to insure uniformity of carburetion, an essential to a smooth running motor, while the higher fractions are sufficient to insure maximum power without an accompanying deposit of carbon. The homogeneous blending of the light fractions of the gasoline blending material with the casinghead prevents undue losses by evaporation, excessive vapor tension, and precludes the possibility of separation between fractions. The available supply of such a blending material is limited only by the crude in the field and the refining capacity of the territory.

Chart No. 4, "Comparison of Kerosene and Naptha Blends with 'Straight Run Blend.'" This chart shows graphically the differences in the characteristics of the curves of the various blends described in the previous three charts.

Chart No. 5, "Comparison of 'Straight Run Blend' with Straight Run 56-58 Gasoline." The two curves on this chart show a comparison of the straight run blend (Chart No. 3) with 56-58 gasoline, the latter representing the bulk of the gasoline output of the Mid-Continent refineries. As shown by these two curves, the better quality for practically all conditions of the blended gasoline over the 56-58 straight run is quite apparent. The lower initial boiling point, the greater percentage of intermediates and the lesser proportions of high-boiling point hydro-carbons in the blended product indicate its superiority over the 56-58 gasoline. Incidentally the addition of casinghead gasoline to a straight run gasoline results in the intermingling of functions of each of the two products which are very closely related in their general characteristics, a considerable part of the distillation curve of each overlapping the other. This results in a more homogeneous motor fuel than is possible by blending the casinghead with naptha or any other heavier fraction of crude oil.

The Tidal Gasoline Company realized that with its large output, it would be impossible to attain this ideal and to continuously market a uniform product unless the manufacture of the blending material were under its control. If this blending material were secured from other refinery organizations which did not have in mind the problems confronting the casinghead manufacturer and to whom the output of this blending material would be but incidental to their main operations, the quality of the production turned out by the refiner would be affected by the exigencies of his particular case rather than the requirements of the casinghead manufacturer. This would make it extremely difficult, if not entirely impossible, to continuously market a uniform product which would insure satisfaction to the consumer and the distributor and thereby make for satisfactory and permanent trade relationships, as well as insure a steady and dependable outlet.

Linking Up Refining Industry

With all these points in mind, the Tidal Gasoline Company decided that the only practical solution was the building and operating of its own refineries. In the carrying out of this policy, this company has leased and is now operating a refinery at West Tulsa which furnishes part of its straight run blending material requirements. Exhaustive research work and practical tests are being carried on with the straight run blending gasoline being obtained by this combination and the knowledge and experience so developed is being utilized in the finishing of a 3,000-barrel refinery which is under construction and will be ready for operation in the near future at Drumright, Oklahoma. This new refinery is located on the same site as their large casinghead gasoline plant and will be operated as an adjunct to it.

This change, which has been brought about in the casinghead industry within the last year, is made particularly significant by the fact that the Tidewater Oil Company, with its well known conservative policies, and which up to this time has confined its refining operations to the Atlantic seaboard, is the first, thru its subsidiary, the Tidal Gasoline Company, to undertake the operation of refineries for the sole purpose of providing a satisfactory blending material for its casinghead production. This action by the Tidewater organization presages a new era in the development of the casinghead industry, which, up to this time, due to its rapid growth, has been in a more or less formative or undeveloped stage.

It is believed that this move is the forerunner of what may be termed the "combination" or "consolidation" period and will result in the ultimate stabilization of the industry.

Effective this date, **National Petroleum News** announces the discontinuance of its Fort Worth, Texas, office.

Some months ago an office was established in Houston, Texas, where developments in the refining industry and the export business were on foot in a big way. In addition, the big news of Mexico reached Houston early. It was foreseen that operations in the Ranger and Wichita Falls territories of northern Texas would reach the point of stabilization where news of these fields could be handled expeditiously and easily from the Houston office and from the Tulsa office.

That point has been reached and henceforth the Houston office, under the direction of Paul Wagner, will be the clearing house for news of Texas, Louisiana, the southwest generally, and Mexican operations. Coincidentally with the closing of the Fort Worth office, **National Petroleum News** has completed plans for more comprehensively covering production news in eastern, central western and Rocky Mountain territories.

Joint Traffic Meet Called For July 30

CHICAGO, July 24.—M. J. Gormley, director division of transportation, American Petroleum Institute, has called a joint meeting of oil traffic and railroad officers for July 30, to be held in the Florentine Room, Congress Hotel, Chicago.

At this time the problems of the oil interests in transportation will be taken up and Mr. Gormley urges all shippers of petroleum and its products have representatives at the meeting. The call for the meeting is inclusive of all oil companies in the United States.

Companies who find it impracticable to send representatives to the meeting are requested by Mr. Gormley to write him an outline of the important things which they believe should be taken up.

That slightly used storage tank or tank truck you need may be offered for sale this week in the Oil Industry Exchange at the back of this issue.

There Is a TRIPLEXD Hose for Every Kind of Gasoline and Oil Service

WHEREVER gasoline and oil are handled, there Triplexd is needed. To meet that need Triplexd is furnished in all required sizes with couplings to suit any connection.

On gasoline and oil pumps, on tank wagons, for paint spraying, for tank cars, for filling and emptying drums, for loading and unloading racks, and all other uses with gasoline and oil Triplexd gives long trouble-free service. It minimizes replacements and eliminates evaporation, leakage and danger from fire.

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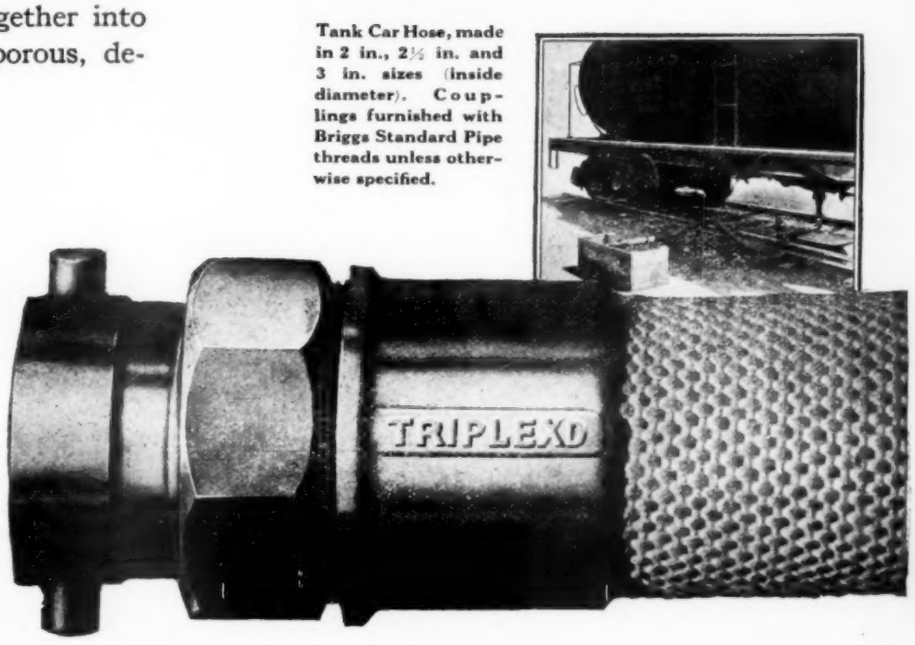
Since good hose is worthless without good couplings we furnish Triplexd with the best couplings it is possible to make (our own patented construction). Thus we make sure that Triplexd users will get the full service value out of their hose. Always specify Triplexd.

Gasoline Pump Hose, made in ¾ in., 1 in. and 1¼ in. sizes (inside diameter). Standard Couplings in stock.

Tank Wagon or Drum Unloading Hose, made in 1¼ in, 1½ in. and 2 in. Sizes (inside diameter). Standard Couplings in stock.

Tank Car Hose, made in 2 in., 2½ in. and 3 in. sizes (inside diameter). Couplings furnished with Briggs Standard Pipe threads unless otherwise specified.



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Percentage Distribution Refinery Output; Crude Oil Situation Changes

Staff Special
HOUSTON, July 28

APPROXIMATE figures, based on percentage computation worked out in the Houston office of **National Petroleum News**, show roughly the distribution of refined products turned out by plants in the United States in the first four months of the present year. These percentages on a daily average basis for the period, have as their background the United States Bureau of Mines statistics, which are utilized in reaching the result obtained. Since none of the percentages are carried further than the second decimal, and fractional barrels and gallons are ignored in making computations, slight discrepancies will show in the percentages obtained, but such discrepancies are not material and would not in any instance change the result more than a fraction of 1 per cent if carried out with greater exactitude.

Another compilation shows for the first four months of 1920, average daily runs thru refinery stills of all districts of 1,156,066 barrels of raw material as against daily average runs for the entire year of 1919 of 1,115,843 barrels. Average daily figures in the four months of 1920 for re-runs amounted to 102,615 barrels as against 126,377 barrels in the preceding 12 months' period.

Here is how crude oil charged thru refinery stills averaged for the respective periods, by districts, the first column in daily barrels showing the average for the 12 months of 1919 and the second column the daily average for the first four months of 1920:

Crude Oil Run and Oil -Rerun

	Daily Crude Runs		Rerun		Total Runs	
	Average 1919	Average 4 Months 1920	Average 1919	Average 4 Months 1920	Average 1919	Average 4 Months 1920
East Coast	205,123	210,920	17,834	15,447	222,957	226,367
Appalachian	56,119	54,079	5,908	5,690	62,027	59,769
Central	81,092	100,014	26,321	15,903	107,413	115,917
Oklahoma-Kansas	169,841	173,073	16,678	6,431	186,519	179,504
Texas-Louisiana	243,683	276,623	16,243	27,714	259,925	304,337
Colorado-Wyoming	34,795	39,448	20,140	16,340	54,935	55,788
California	199,816	199,294	22,252	15,090	222,068	214,384
Total United States	990,466	1,053,451	125,377	102,615	1,115,843	1,156,066

The percentage recovery of refined products, by districts, and the average for the United States, is shown in an accompanying table, which covers the same two periods. A slightly increased percentage recovery of gasoline is shown in the 1920 daily averages as against 1919, but for the most part other refinery products show a slight decline in the averages for the entire United States. On the other hand, certain sections of the country will show increased out-turn of products for which a decline is shown generally.

In some instances this is a result of different grades of crude oil being utilized in the first four months of 1920 as compared with the source of supply in 1919. Other variations are due, also, to the exigencies of the situation and the refinery practice followed in the plants of a given territory as against the policy in the preceding period. Again, the 1919 figures constitute an average of the entire year, whereas in 1920 only four months are considered, making the result less valuable were they to be considered from a strictly comparative viewpoint.

***Percentage Recovery Refined Products By Districts**

	Gasoline		Kerosene		Gas and Fuel Oil		Lubricants		Miscellaneous		Loss	
	Daily Avg.	Daily Avg. 4 Mos.	Daily Avg.	Daily Avg. 4 Mos.	Daily Avg.	Daily Avg. 4 Mos.	Daily Avg.	Daily Avg. 4 Mos.	Daily Avg.	Daily Avg. 4 Mos.	Daily Avg.	Daily Avg. 4 Mos.
	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920
East Coast	22.81	22.37	20.57	15.44	35.87	41.80	8.20	9.20	.....	1.78	5.09	4.24
Appalachian	28.41	29.16	20.05	18.66	17.80	20.58	19.03	19.48	6.85	4.28	6.02	5.80
Central	34.71	33.53	13.16	11.39	29.17	30.05	6.20	5.34	8.96	10.30	6.08	5.90
Oklahoma-Kansas	30.80	31.14	13.74	14.35	44.57	43.18	3.26	3.34	3.47	3.66	4.01	3.59
Texas-Louisiana	20.09	21.20	14.28	15.13	47.99	43.58	3.04	3.74	9.16	11.51	3.21	3.12
Colorado-Wyoming	28.23	30.18	7.80	10.83	33.21	22.44	.....	1.86	26.52	29.31	3.58	5.07
California	12.28	17.81	5.98	6.37	67.58	63.97	.....	2.55	9.01	7.61	2.10	1.99
Average United States	25.33	26.48	13.65	13.16	39.45	37.94	7.94	6.50	10.66	9.76	4.29	4.24

*Percentage of Wax, Coke and Asphalt not calculated.

United States Geological Survey figures on consumption of crude oil, production by fields, etc., for similar periods show a total loss in daily production in five general districts of 23,065 barrels against a total gain of 144,951 barrels, or a net gain in daily production of 121,886 barrels; daily average gain in stocks of 17,958 barrels as against total daily draught on stocks of 42,883 barrels, or a net draught on stocks of 24,925 barrels daily.

Plus and minus figures comparing production and stocks in the several districts for the two periods, as shown by a computation based on geological survey statistics, follow:

	Daily Avg. Change in Prod'n, Plus and Minus	Daily Avg. Changes in Stocks, Plus and Minus
Appalachian	—2,151	+3,925
Lima-Indiana	—1,408	—841
Illinois	—4,584	—2,483
All Mid-Continent	.....	+13,800
N. Louisiana	+62,934	
Okla-Kans	+71,147	
N. Texas	—11,100	
Gulf Coast	+5,951	—11,059
Rocky Mountain	+4,919	+233
California	—3,822	—28,500

Daily average changes in crude oil stocks, of all fields, first 4 months of 1920, show up in this computation as follows:

	Daily Avg. Accum'l'n	Daily Avg. Draughts
Appalachian	3,925	.....
Lima-Indiana	.....	841
Illinois	.....	2,483
All Mid-Continent*	13,800	.....
Gulf Coast	.....	11,058
Rocky Mountain†	233	.....
California	.....	28,500
Total	17,958	42,883

*All Mid-Continent, as here shown, includes Oklahoma-Kansas, North Texas and North Louisiana stocks, the daily figures being compiled from the monthly figures of the U. S. Geological Survey, which does not separate the stocks held in the several divisions; North Texas stocks were consistently drawn upon in the period dealt with, also Oklahoma-Kansas, so that North Louisiana is almost entirely responsible for the Mid-Continent accumulation.

Here are ten good reasons why the Standard Oil Company and the Consumers Service Company of South Bend, Indiana, selected *Dependable Red Seal Motor Trucks:*

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Hundreds of thousands of motor trucks are being assembled annually and put into service daily.

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America is beginning to recognize that DEPENDABLE RED SEAL MOTOR TRUCKS are best equipped and best adapted for the oil producers, the oil refiners, and the oil distributors.

The Standard Oil Company and the Consumers Service Company of South Bend, Indiana, are using DEPENDABLE TRUCKS.

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Our Claim's in Our Name—

DEPENDABLE—THE BETTER TRUCK

DEPENDABLE TRUCK AND TRACTOR CO. **GALESBURG, ILL.**

Nearly 30,000 barrels daily of Homer (North Louisiana crude) went to storage the first four months of 1920, indicating draughts of 16,200 barrels, roughly, upon North Texas and Oklahoma-Kansas stocks daily.

†Starting with January 1920, the United States Geological Survey began compiling Rocky Mountain stocks to include crude oil held in storage by pipelines and other marketing companies, whereas they formerly included also stocks held by refineries receiving oil directly from the wells. This is taken into account in the accompanying compilation, which makes for the Rocky Mountain territory stocks being based on a compilation as of January 31, 1920, and April 30, 1920, the daily average of that period appearing in this tabulation.

A summary of stocks and production indicating daily draughts for all United States, follows:

Increased Production, All U. S. in Barrels, daily	121,886
Daily Average draughts on stocks	42,883
Daily Average increased stocks	17,958
Net Increase draughts on stocks	24,925
Increased Total Crude Consumption for Total U. S., daily basis	146,811

In this connection, it is interesting to repeat publication of the monthly comparative movement of Coastal (South Texas) crude (**National Petroleum News** figures) to major East Coast refineries, in tanker shipments, for the first six months of 1920 as against monthly shipments in the year 1919. These figures previously appeared in the July 14 issue of **National Petroleum News:**

Month	Year 1919	Year 1920
January	229,396	665,836
February	487,730	995,248
March	559,314	845,397
April	471,394	1,133,395
May	635,841	1,042,121
June	652,550	862,670
July	575,922	.....
August	963,713	.....
September	839,943	.....
October	592,180	.....
November	742,580	.....
December	447,266	.....

This movement, with the addition of the Humble Oil & Refining Company's Texas City loadings of Ranger crude, show the total amount of crude moved in coastwise tanker traffic to East Coast refineries, as follows:

	Ranger Crude, 1920	Total Coastwise 1920
January	515,782	1,181,618
February	425,594	1,420,842
March	388,480	1,233,877
April	375,691	1,509,086
May	419,175	1,461,296
June	505,805	1,300,235

The monthly comparative movement of export crude from Gulf Coastal loading points follows:

Month	Year 1919	Year 1919
January	115,534	.....
February	147,346	22,559
March	83,069	265,346
April	76,048	183,019
May	309,591	158,896
June	129,152	153,310
July	216,219	.....
August	14,726	.....
September	108,234	.....
October	44,760	.....
November	108,288	.....
December	191,483	.....

Using United States Geological Survey figures for the first four months of 1920, supplemented by **National Petroleum News** own estimates for May and June, the average daily production of crude oil by fields is shown in the appended table. The figures for 1919 are based on a compilation of monthly figures of the United States Geological Survey. The results, together with percentage deductions, follow:

Field	Daily Avg. Prod. in Bbls. Year of 1919	Per Cent of Total U. S.	Daily Avg. Est. 6 Months 1920	Per Cent of Total U. S.
North Louisiana	36,191	3.7	99,125	8.6
Gulf Coast	56,350	5.4	62,301	5.4
Appalachian	80,087	7.7	77,936	6.7
Rocky Mountain	37,216	3.6	42,135	3.6
Lima-Indiana	9,435	.91	8,027	.69
Illinois	34,071	3.2	29,487	2.5
California	278,257	26.9	274,435	23.7
Oklahoma-Kansas	317,627	30.6	388,774	33.6
North Texas	184,709	17.8	173,609	15.0
Total United States	1,034,943	99.8	1,155,829	99.8

Stocks on Hand at Refineries at Close of Each Month

	Crude Oil Bbls.	Re-run Bbls.	Gasoline Gals.	Kerosene Gals.	Gas & Fuel Gals.	Lubricating Gals.	Wax Pounds	Coke Tons	Asphaltum Tons	Misc. Gals.
1918										
May 31	11,824,633	872,300	460,637,479	347,311,945	515,020,224	161,009,729	168,178,328	15,583	104,214	317,115,697
June 30	11,956,151	932,561	418,440,353	426,285,676	550,704,759	158,316,257	169,424,428	17,478	97,631	273,877,024
July 31	14,026,525	1,548,971	349,928,604	432,807,129	519,012,839	136,460,207	176,539,564	17,943	92,597	450,086,589
Aug. 31	13,946,595	1,082,892	285,446,538	424,281,481	569,016,413	137,496,986	176,197,680	19,912	88,446	459,891,496
Sept. 30	14,461,100	1,312,275	269,772,723	436,628,907	583,407,769	147,425,556	181,044,508	16,866	79,424	444,353,139
Oct. 31	15,438,756	1,308,744	250,328,329	419,409,944	596,116,351	135,196,542	195,797,590	23,905	74,159	457,222,127
Nov. 30	15,222,401	1,373,740	270,072,011	397,804,012	583,777,918	132,923,478	190,953,158	22,005	74,955	466,887,345
Dec. 31	15,749,771	1,300,018	297,326,983	380,117,829	659,001,357	138,853,574	199,657,542	22,605	76,858	477,783,740
1919										
Jan. 31	15,380,185	1,088,264	383,212,692	332,393,181	646,411,414	158,370,431	189,064,329	28,732	93,027	483,942,833
Feb. 28	14,820,601	1,176,483	458,449,187	303,062,436	692,816,000	152,297,163	209,908,707	33,716	102,547	500,413,825
Mar. 31	15,106,361	1,121,963	546,062,429	294,677,623	749,067,806	165,495,254	235,588,922	37,642	113,949	468,035,524
April 30	15,184,844	980,597	593,616,170	276,356,837	807,895,498	170,122,088	249,351,315	45,601	118,863	480,607,249
May 31	16,372,314	781,644	594,035,688	244,635,631	788,740,572	173,754,109	260,137,244	41,677	121,524	485,574,251
June 30	16,775,723	1,270,470	593,896,610	252,542,434	811,790,637	175,384,775	254,705,414	43,407	108,384	452,475,704
July 31	15,304,915	1,034,976	514,919,358	279,855,061	817,809,519	173,884,303	255,207,227	40,194	98,372	479,127,372
Aug. 31	15,131,549	932,648	434,531,446	296,065,646	830,329,785	170,572,819	256,133,738	43,615	97,276	494,859,576
Sept. 30	13,925,441	1,173,799	371,125,419	311,843,057	862,135,385	158,967,070	252,407,708	39,853	81,324	460,332,669
Oct 31	14,091,945	1,143,690	354,160,071	329,160,795	828,574,452	152,536,736	257,548,072	34,829	76,409	438,848,970
Nov. 30	13,983,716	1,113,581	378,133,185	347,070,560	791,052,991	149,193,143	239,710,946	31,933	82,304	435,315,076
Dec. 31	13,143,285	1,141,384	446,793,431	339,319,690	714,124,455	137,318,934	212,461,594	21,146	73,449	401,883,474
1920										
Jan. 31	13,200,727	966,503	515,934,364	327,548,646	652,080,901	141,690,177	203,662,032	21,236	72,036	391,033.357
Feb. 29	13,500,599	863,220	562,996,489	330,120,942	590,322,125	132,759,244	197,996,501	21,709	70,067	405,588,469
Mar. 31	14,346,458	806,479	626,393,046	334,617,117	580,182,858	130,630,597	168,030,018	17,542	87,720	428,749,660
April 30	15,145,691	758,938	643,552,644	376,358,123	590,687,009	140,355,972	188,170,912	19,694	78,273	487,932,157
May 31	15,331,375	839,071	577,671,759	419,077,605	618,939,135	135,882,485	177,847,274	18,836	71,273	488,168,962

Launch Concrete Tanker On Gulf

HOUSTON, July 25.—A 4,000-ton concrete tanker, No. 1, belonging to the France & Canada Oil Transport Company (one of the units of the New England Oil Corporation), was launched successfully July 24 at Port Aransas shipyard, near Corpus Christi. It will be placed in the Port Aransas-Tampico oil traffic, soon to be followed by No. 2, now on the ways and nearing completion. Upon the outcome of the maiden voyage of No. 1 is said to hinge construction plans for 18 additional concrete tankers by the company.

A notice was received at Galveston of an announcement authorized by the Washington office of the Panama Canal Board from the governor of the Panama Canal zone, dated July 16, reading:

"Price of fuel oil at canal terminals will be increased to $3.50 per barrel, effective August 1, 1920. Bunkers will be limited to sufficient oil to reach the next bunkering station. This will apply to all ships whether they have contracts with local oil companies or not."

Following announcement at Dallas by federal authorities of a gasoline price inquiry to be made, similar announcements were made at Fort Worth by R. E. Taylor, United States district attorney. Taylor is quoted as saying investigation was ordered by the department of justice at Washington.

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Any further information may be obtained from R. S. Stokvis & Sons, Inc., 17 Battery Place.

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Bureau of Mines Statistics on Refinery Production

Output of Refineries in the United States for February-May, 1920, and total output for 1918 and 1919, shown by Districts as compiled by the United States Bureau of Mines

1918-19-20	East Coast (N. Y., Phila. and Balto.)	Pa., N. Y., E. Ohio and W. Va.	W. Ohio, Ind., Ill., Ky. and Tenn.	Oklahoma and Kansas	Texas and Louisiana	Colorado and Wyoming	California	Total
Crude Run(bbl.) All 1919	**74,869,891**	**20,483,273**	**29,598,216**	**61,991,730**	**88,943,946**	**12,700,045**	**72,933,052**	**361,520,157**
Total, 1918	**64,119,528**	**18,804,510**	**22,184,148**	**60,805,183**	**81,733,167**	**11,913,125**	**66,454,969**	**326,024,633**
Feb., 1920	5,635,110	1,455,748	3,073,566	5,117,170	7,526,774	1,167,511	5,232,844	29,208,723
Mar., 1920	6,672,610	1,665,225	3,077,308	5,455,185	9,164,122	1,278,171	6,279,383	33,592,004
April, 1920	7,000,083	1,826,730	2,903,601	5,125,573	8,868,206	1,269,654	5,858,193	32,852,040
May, 1920	7,451,095	1,785,264	3,457,742	5,526,586	8,870,244	1,362,002	6,125,349	34,578,282
Re-run (bbl.) All 1919	**6,509,424**	**2,156,615**	**9,607,374**	**6,087,548**	**5,928,807**	**7,351,062**	**8,121,786**	**45,762,619**
Total, 1918	**7,330,083**	**1,992,336**	**7,987,413**	**9,378,896**	**5,579,957**	**4,627,512**	**13,669,007**	**50,565,204**
Feb., 1920	577,922	192,800	548,695	237,149	731,806	519,725	496,977	3,301,074
Mar., 1920	441,431	169,222	481,518	137,606	1,011,007	543,154	398,903	3,182,841
April, 1920	295,116	153,549	438,289	182,392	819,031	467,835	473,161	2,829,373
May, 1920	411,113	171,553	372,024	206,739	921,123	671,729	439,819	3,194,100
Gasoline (gals.) All 1919	**779,698,016**	**270,113,740**	**571,477,670**	**880,724,011**	**800,336,848**	**237,713,872**	**417,792,940**	**3,957,857,097**
Total, 1918	**718,720,111**	**241,639,462**	**460,795,843**	**865,799,574**	**636,856,670**	**212,108,809**	**434,392,494**	**3,570,312,963**
Feb., 1920	57,902,258	20,025,695	49,678,529	69,871,578	78,810,531	21,943,163	34,356,943	322,588,697
Mar., 1920	71,056,252	23,371,100	52,873,344	70,991,944	87,323,078	23,059,164	38,452,796	367,137,678
April, 1920	67,018,514	24,411,967	47,903,279	69,921,723	85,976,617	22,081,626	38,283,725	355,597,451
May, 1920	67,998,397	23,865,388	60,907,714	74,059,601	91,430,203	23,924,331	38,893,657	381,079,291
Kerosene (gals.) All 1919	**703,112,919**	**190,623,584**	**216,704,665**	**392,879,976**	**568,857,274**	**65,691,295**	**203,662,431**	**2,341,632,164**
Total, 1918	**485,559,229**	**136,951,334**	**187,070,255**	**415,222,396**	**435,281,246**	**62,695,223**	**102,580,454**	**1,825,360,137**
Feb., 1920	43,000,961	13,672,905	19,281,032	31,927,660	62,307,637	8,406,504	15,926,635	194,523,334
Mar., 1920	40,885,918	13,660,120	16,428,059	33,731,543	58,075,184	8,884,332	19,445,019	191,110,175
April, 1920	45,583,384	15,150,341	14,164,704	31,519,932	52,274,512	8,254,420	17,521,724	184,468,017
May, 1920	39,171,714	15,642,232	17,895,348	30,656,402	52,225,751	10,643,591	14,642,051	180,877,089
Fuel, Gas Oil (gals.)								
All 1919	**1,226,192,099**	**169,282,410**	**048,241,614**	**1,259,048,928**	**1,912,281,972**	**279,701,842**	**2,300,539,701**	**7,627,288,566**
Total, 1918	**1,118,998,731**	**201,775,157**	**344,497,236**	**1,344,145,229**	**1,934,441,119**	**243,755,929**	**2,133,784,156**	**7,321,397,557**
Feb., 1920	107,359,882	14,741,766	45,537,768	99,054,781	150,788,588	15,829,062	156,373,010	589,684,857
Mar., 1920	129,590,303	14,522,592	42,147,085	102,962,619	199,237,875	16,054,239	182,431,250	686,945,963
April, 1920	131,480,674	17,042,492	44,069,583	93,157,122	169,862,504	15,744,288	171,732,122	643,088,785
May, 1920	160,737,213	16,704,589	43,552,610	108,714,334	185,639,611	18,494,201	173,355,797	707,198,355
Lubricants (gals.)All 1919	**280,224,126**	**180,985,515**	**102,022,709**	**93,207,776**	**121,223,387**	**3,481,554**	**65,614,950**	**846,760,017**
Total, 1918	**257,412,655**	**182,864,252**	**97,460,092**	**109,876,505**	**123,258,451**	**3,653,559**	**66,940,253**	**841,465,767**
Feb., 1920	24,107,178	13,172,882	8,314,527	6,902,424	13,131,049	1,284,951	7,318,289	74,243,073
Mar., 1920	27,370,520	15,265,882	8,471,151	8,331,226	14,488,579	928,137	6,963,478	81,818,973
April, 1920	29,615,342	15,891,548	7,497,975	9,615,501	14,951,749	1,072,144	6,923,805	85,568,064
May, 1920	29,790,451	16,734,437	8,784,396	8,257,255	16,364,073	963,553	8,358,245	89,252,410
Wax (lb.) All 1919	**186,791,005**	**87,703,238**	**69,399,635**	**43,782,952**	**74,439,594**	**3,070,741**	**2,028,058**	**467,235,223**
Total, 1918	**215,791,443**	**86,432,928**	**78,020,865**	**48,726,352**	**73,145,391**	**2,259,346**	**768,032**	**505,144,357**
Feb., 1920	16,230,689	6,890,462	5,206,405	2,902,426	7,098,172	1,284,951	208,651	39,821,756
Mar., 1920	19,592,901	7,224,459	5,586,620	3,720,601	6,510,142	2,049,504	201,894	44,886,121
April, 1920	17,621,648	8,428,338	4,427,352	5,350,309	5,036,851	2,137,610	351,285	43,353,393
May, 1920	18,193,124	7,748,750	6,923,348	3,344,669	4,553,100	1,830,746	177,411	42,771,148
Coke (ton) All 1919	**248,945**	**18,157**	**137,065**	**56,843**	**122,268**	**20,181**	.....	**603,459**
Total, 1918	**222,644**	**19,758**	**137,759**	**56,659**	**107,931**	**14,912**	.....	**559,663**
Feb., 1920	13,784	1,682	10,589	2,061	8,647	1,045	.....	37,808
Mar., 1920	16,989	1,320	10,219	3,009	11,783	1,046	.....	44,366
April, 1920	17,030	1,580	9,287	2,783	9,387	525	.....	40,592
May, 1920	16,428	1,121	11,255	2,123	9,438	551	.....	40,916
Asphalt (ton) All 1919	**430,135**	**2,115**	**91,309**	**172**	**210,532**	**20**	**167,602**	**901,885**
Total, 1918	**270,172**	**2,900**	**71,942**	**10,434**	**145,887**	**40**	**106,593**	**607,968**
Feb., 1920	29,743	236	7,219	.....	19,497	.....	14,025	70,720
Mar., 1920	36,558	464	7,114	.....	33,996	.....	19,568	97,700
April, 1920	32,525	561	6,306	.....	30,760	.....	16,790	86,942
May, 1920	39,288	586	7,989	.....	31,917	.....	22,610	102,390
Misc. (gals.) All 1919	**75,678,218**	**65,115,629**	**147,537,937**	**98,214,085**	**365,163,867**	**219,311,185**	**306,842,859**	**1,278,863,780**
Total, 1918	**78,617,550**	**36,308,371**	**43,476,748**	**68,125,328**	**352,028,239**	**136,475,995**	**571,678,155**	**1,286,710,383**
Feb., 1920	6,511,173	2,076,704	15,134,348	8,443,235	34,036,122	19,381,503	18,372,062	103,955,147
Mar., 1920	3,867,921	4,484,614	16,129,842	9,304,175	43,800,443	23,732,645	23,467,775	124,787,415
April, 1920	4,318,770	3,984,383	14,087,369	7,505,936	57,712,353	21,011,578	21,894,551	130,514,940
May, 1920	3,668,269	3,028,862	14,500,702	9,650,168	37,966,390	27,208,711	29,531,821	125,554,923
Loss (bbls.) All 1919	**4,137,640**	**1,363,835**	**2,325,185**	**2,727,227**	**3,043,689**	**716,819**	**1,700,831**	**16,015,226**
Total, 1918	**3,631,988**	**1,187,926**	**1,890,377**	**2,525,447**	**3,019,166**	**732,931**	**1,568,790**	**14,566,625**
Feb., 1920	234,456	100,652	218,075	174,286	235,470	84,092	119,473	1,166,504
Mar., 1920	266,243	101,806	193,469	181,627	298,482	77,984	121,398	1,241,009
April, 1920	343,860	116,519	190,551	227,283	381,566	103,334	132,937	1,496,050
May, 1920	322,462	109,774	217,943	201,428	400,390	88,360	134,417	1,474,774

May Figures Climb In Crude Refined

WASHINGTON, July 26. — The eady increase in the amount of crude arged thru the stills of the country's fineries and the amount of oil re-run own in the preceding comparison of e oil run during the first four months 1920 compared with the daily aver- e of 1919, was maintained and even phasised in the figures of May com- led by the Bureau of Mines under the rection of H. F. Mason and just ven out.

In May, 34,578,282 barrels of crude ere run, an increase of almost 2,000,- 0 barrels over the preceding month hen the total was 32,852,040 barrels. here was an increase registered in ay in all but one of the seven re- ing districts into which the country divided in the Bureau of Mines sta- tics. The exception was the Penn- lvania-New York-Eastern Ohio-West irginia district where the producers e generally holding a large part of eir oil.

Likewise the total of oil re-run ex- eeded the April total by more than 0,000 barrels, each of the refining stricts, except California showing an crease.

Gasoline production during May, ows a daily average of 12,292,880 gal- ons; an increase of 439,632 gallons over e daily rate of production during the eceding month of April. The gaso- e production in May is the highest record.

Domestic consumption, however, ac- rding to Bureau of Mines estimates, as increased approximately 82,000,000 allons, or 28 per cent more than the onsumption in April. Stocks of gaso- e, therefore, were reduced by 05,- 0,849 gallons during the month, owing that the seasonal demand for asoline has overtaken supply and the duction in stocks for the year has egun. In 1919 gasoline stocks did ot start to decrease until in June, or o months later in the season.

The exports of gasoline during May ere 25,125,000 gallons larger than in e preceding month. Shipments to ur insular possessions were reduced pproximately 727,000 gallons, or over 0 per cent compared with April ship- ents.

The production of lubricating oils in ay reached the highest point on re- ord, with a daily average of 2,879,110 allons. Lubricating stocks on May were 136,000,000 gallons, or a de- rease of 39,000,000 gallons since June, 919.

The total export movement of lu- ricating oils for the first five months f 1920 showed a gain of 58,000,000 gal- ns, or 47 per cent increase over the me period in 1919. Domestic con- mption for the first five months of 920 was 39,000,000 gallons, or 21 per nt larger than the consumption in 919. The increased domestic con- mption and foreign demand may be ken as an indication of increased in- strial activity both home and abroad.

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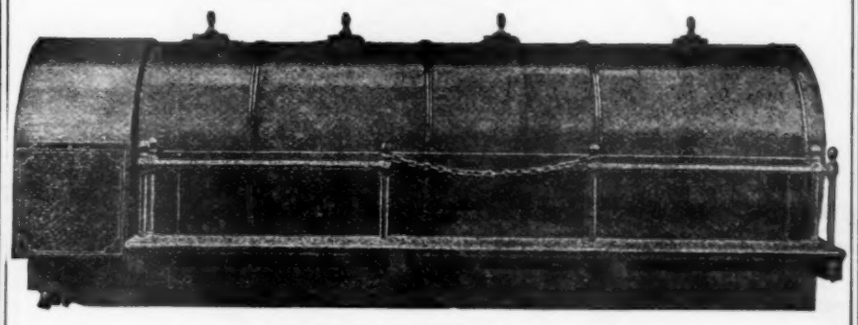

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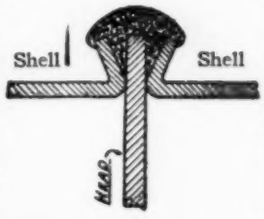

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For Air and Water at the Curb

Oil Carries More Than Share On Rail Rate

By Special Correspondent

WASHINGTON, July 25.—Becaus the Railroad Labor Board, on July 2 awarded an increase of 22 per cent i wages to the railroad operatives, freig rates will have to be increased in all par of the country. The increase in the eas ern section of the country will be substa tially 39.75 per cent. In the western par 32.03 and in the southern, 38.91 per cen

At the same time passenger fares wi go up, for the man who rides as a com muter or in a day coach on longer trip 20 per cent. For the man who rides in parlor car the increase will be 20 per ce plus a surcharge for transportation equ to 50 per cent of the amount he pays f his space. That is to say, if a man pay $2 to the Pullman Company, he must pa an additional dollar to the railroad com pany. If he pays $10 for a drawing roo he must contribute $5 to the railroad com pany for the privilege.

When this advance is made, the railro rates of the country will have gone up little more than 100 per cent in a litt more than five years. The commone yard-stick freight rate in the country the first-class rate between New York an Chicago. Until January 1, 1915, it wa 75 cents per 100 pounds. When the in crease now in immediate prospect has bee made, that rate will be $1.575.

These percentages will obtain on a kinds of oil and everything the oil in dustry uses. But the increases in rates o oil, since January 1, 1915, will be muc more than 100 per cent, especially in th territory east of the Mississippi. The rail roads at odd times between general in creases have been "adjusting" rates o oil. For instance, in that part of the te ritory between the Mississippi and th north and south line thru Buffalo an Pittsburgh, there was an increase in th summer of 1916 on an almost informa ruling by the Interstate Commerce Com mission to the effect that oil rates shoul be on the basis of full fifth class instea of only 90 per cent of that class. Year before the oil rates were fixed at 90 p cent of fifth. Some railroads publishe a rule saying that oil rates should be 9 per cent of fifth. Others took pen an paper and figured out what 90 per cent o fifth meant and set down the result i commodity tariffs, for the convenience o the oil shippers. When the class rate went up the railroads that published th rule increased their rates, but those th had commodity tariffs did not. The com mission ruled that the oil rates shoul come up to 90 per cent of fifth and final that fifth class was the proper rating.

Therefore, the oil industry is bein called upon to pay a relatively larger per centage of the cost of transportation tha other commodities. That, perhaps, ma not hurt now when the supply is so sho that there is rationing on the Pacific coas but if there should come a slump of an kind, the higher transportation rates ma hurt like a whip lash.

There are men who believe the effect o the increase in rail rates will be to place heavier demand on the oil industry tha ever. They believe the high rail rat will drive a considerable quantity of mer chandise from the railroads to the truc lines that are in operation all over th country. The trucks were good subst tutes when the railroads, by reason of th weather or strikes—were practically o

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of business. The cost, then, was considerably higher than rail transportation, if the charges of the delivery trucks at the terminals were reasonable.

Now that there is to be another hoist in rail rates, it is figured that truck transportation, avoiding as it does truck haul to and from the railroad freight station, will give the truck lines more business than ever because they pick up freight at the warehouse door and put it down at the store door of the buyer, while a railroad service requires terminal truck service at each end.

That is a consideration which the oil industry is not probably thinking about now. It is suggested merely as an antidote for the knowledge that altho there is to be an increase in rail rates that is expected to bring in a total increase in revenue of $1,643,000,000, there is not one single promise of an increase in the service. The vast total is to be absorbed in paying the railroads 5.5 per cent on their investment, one half of one per cent for the accumulation of a fund from which they are to buy non-productive property such as new stations and bridges, and the payment of higher wages.

Presumably the service will improve when the carriers obtain a fair dividend on their investment and the operatives obtain what their leaders call a living wage, but there is no definite promise of anything now. On the contrary, those who think they know the mental slant of the operatives, and their fondness for the Plumb Plan, believe the service will grow worse. The country is now wondering where it is to get its coal next winter. The lack of coal is attributed to car shortage.

If the railroad operatives would increase the daily average travelling of each freight car from twenty-four to thirty miles per day, there would be so much coal and every other commodity in the country that there would not be another peep about car shortage.

Last Minute News Of The Producers

FORT WORTH, July 26.—Stephens county completions, in the black lime area north of Ranger, include up to the minute, Snowden Brothers and McSweeney's No. 3 Higginbotham, Sec. 1, Lunatic Asylum Survey, near Breckenridge, which started off at 250 barrels an hour at 3,133 feet. Southwest of the Breckenridge, or Parks, pool development, Lambert et al's No. 1 Compton, in the T. E. and L. Survey, was abandoned at 3,358 feet, disproving territory already partially condemned.

Around Gunsight, in the southern part of Stephens county, Southwestern Petroleum Company and Ajax Oil Company both completed 1,000-barrel wells on their respective Tolle acreage after shots of 440 and 330 quarts, respectively, Southwestern at 3,130 to 3,150 feet, and Ajax at 3,165 to 3,260 feet. Cooper and Henderson's No. 5 Martin, Stephens county, made 300 barrels at 3,154 to 3,190 feet.

CASPER, WYO., July 26.—The Ohio Oil Company has just completed a well in the Grass Creek field that had an initial production of 800 barrels at 1,80[illegible] feet, from what is called the second, or deep pay. The oil is much heavier than the regular Grass Creek crude.

Lucey Manufacturing Corporation

(A New York Corporation)

New Issue

$1,500,000 Ten-Year 8% Convertible Sinking Fund Notes, Series "A"

To be dated July 1, 1920 Due July 1, 1930
Interest payable January 1 and July 1 in New York without deduction for normal Federal taxes not in excess of 2%.
Authorized $2,500,000. To be presently issued $1,500,000
Coupon Bonds in $1,000 and $500 denominations, registerable as to principal only.
Convertible into Class "A" Stock at the rate of one share of Stock for each $55 face amount of notes. Callable at 105 and interest, with right of conversion to run thirty days after date of call. Callable on any interest date at 115 and interest, without right of conversion.

GUARANTY TRUST COMPANY OF NEW YORK, TRUSTEE

New Issue

37,500 Shares Class "A" Stock

Entitled, before any dividend may be paid on Class "B" stock, to receive dividends of $5 a share for each of the three years ending July 1, 1923, and $8 a share for each year thereafter. After Class "B" stock has during any one year received dividends equal to the rate being paid on Class "A" stock the two classes will participate share for share in further dividends declared during that year. Convertible, unless called at $80 per share, into Class "B" stock, share for share. Callable at $66 per share, plus accrued dividends, the right to convert running for thirty days after date of call; or at $80 per share plus accrued dividends, without right of conversion.

TRANSFER AGENT:
CENTRAL UNION TRUST COMPANY OF NEW YORK
REGISTRAR:
THE MECHANICS & METALS NATIONAL BANK OF NEW YORK

CAPITALIZATION

Upon completion of the present financing, the capitalization of the Company will be as follows:

	Authorized	To Be Outstanding
Ten-Year 8% Sinking Fund Convertible Notes, Series "A"	$2,500,000	$1,500,000
Class "A" Convertible Stock, par value $50	*64,773 shares	37,500 shares
Class "B" Stock, no par value	**150,000 shares	100,000 shares

*27,273 Shares reserved for conversion of Notes. **Additional "B" Stock will be issued as required for conversion.

We call attention to a letter from J. F. Lucey, Esq., President of the Corporation, which he has briefly summarized as follows:

BUSINESS: The business of this Company was started in 1908 in California by J. F. Lucey, and is today one of the two largest manufacturers and distributors of oil well drilling equipment. The oil well supply industry does not partake of the speculative risks connected with oil production.

PROPERTY: Through its constituent companies it operates manufacturing plants in Chattanooga, Tenn., and Houston, Texas. It has branches and warehouses in the principal oil fields in this country and abroad.

ASSETS: Net tangible assets over 300% and net current assets over 210% of present issue of notes. The latter must be maintained at 150% of funded indebtedness. Net tangible assets applicable to Class "A" Stock, after new financing, amount to approximately $82 per share, of which approximately $46 per share is in current assets.

EARNINGS: Net profits applicable to interest charges, after allowing 6% return on the new capital, for the year ended December 31, 1919, were over six times interest on the notes; for the three-year period 1917-1918-1919 averaged over five times, and for the first 4 months of 1920 were over nine times the interest requirements on the notes presently to be issued. Earnings for the year ended December 31, 1919, after allowing 6% return on the new capital and after all prior charges, sinking fund and taxes were equivalent to $9.52 per share; for the three years ended December 31, 1919, to an average of $6.99 a share per annum; and for four months ended April 30, 1920, were at the rate of $14 a share per annum on Class "A" Stock presently to be issued.

MANAGEMENT: The management has taken Class "B" Stock only for its entire interest in the business, with the exception of $50,000 for retirement of the old Preferred Stock, and will continue the policies which have been successful for the past twelve years.

SINKING FUND: Annual sinking fund on notes of 5% for 5 years, and 7½% thereafter, will retire majority of notes by maturity.

DIVIDENDS: It is the expectation of the management that dividends at the rate of $5 a share per annum will be inaugurated on the Class "A" Stock in the immediate future.

When, as and if issued and received by us, trust company receipts, exchangeable for temporary or definitive notes and stocks, will be delivered.

8% NOTES
Price 98 and Accrued Interest, to Yield 8.30%

CLASS "A" STOCK
Price $45 per Share

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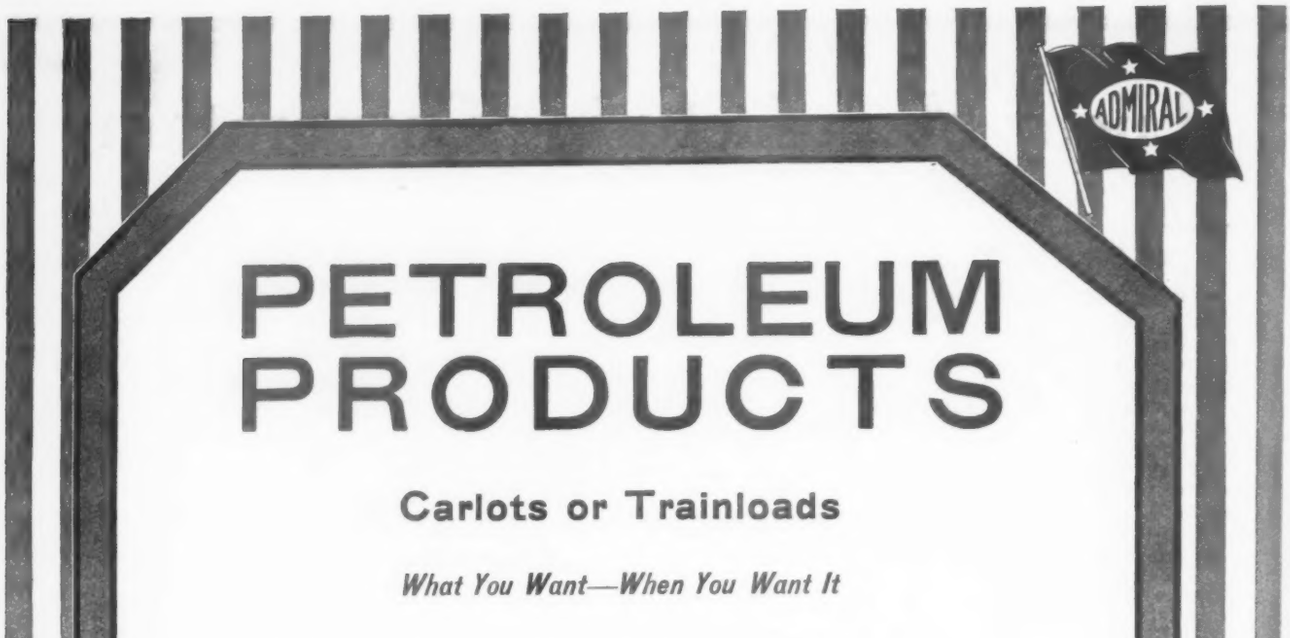
5 Nassau Street, New York

Dominick & Dominick
115 Broadway, New York

Hallgarten & Co.
5 Nassau Street, New York

This information and these statistics are not guaranteed, but have been obtained from sources we believe to be accurate



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Wyoming Operations About Normal; Production Not Increasing

By H. L. Wood

THE writer of the accompanying article, having completed a series of articles covering the present fields and the possibilities of Kentucky and Tennessee, has gone for **National Petroleum News** into the fields of the Rocky Mountain territory. Col. Wood's familiarity with operating conditions in this part of the country dates from the time when oil was first found there in commercial quantity and his survey of the work in Wyoming and Montana and other states where development is under way, carries with it the stamp of authority. His first investigation is of the Wyoming fields, which are discussed in this and subsequent articles, following which he will take up Montana. The last article of the series on Kentucky appears on other pages of this issue.—Editor.

CASPER, WYO., July 24

THERE was more activity in Wyoming two years ago than now, but present operations count for considerably more in actual production and territory defined, so much of the activity two years ago was by promoters and people not familiar with the hard work, experience and real nerve necessary to develop oil production in sections like Wyoming. Now a few experienced operators with sufficient capital are doing all the prospect and development work, and produce more satisfactory results.

Drilling activity, as to geographical location, is in sections practically unknown two years ago and the districts then active are now either dull or almost abandoned, for several reasons having to do with amateur promotion experiments and interests, as so generally happens in new oil territory. Northwestern Wyoming—Basin-Greybull, Byron, Elk Basin, Grass Creek, Lander, Thermopolis, Cody and Buffalo Basin—is now extremely quiet, early production having failed to hold to expectations and the territory then being exploited having failed to develop anything except a little gas. Extreme western Wyoming, around Evanston and Kemrerer, where a few shallow wells that produced high gravity oil but failed to be profitable have been drilled, is practically deserted now. The Thermopolis field—black oil—developed poorly and the talent has sought other territory. Grass Creek seems to be about developed and nothing much is doing, as is true of Washakie county, where the Hidden Dome district two years ago created much excitement but showed only a little gas. Territory around Douglas, east of Casper, is not sought by real operators. Southwest and west of Casper, in the Poison Spider district, a little black oil is being developed by two or three companies, and a little gas is awaiting a market at Casper. Big Muddy, just east of Casper, is now quiet, the limits of the small field having been clearly defined and the three companies interested doing only routine work; the daily production has declined from its maximum of about 15,000 barrels a year ago to approximately 5,500 barrels.

The only active places in Wyoming now are Carbon county, including the Lost Soldier, Ferris and Rock River pools, with outlying territory being actively prospected; Weston county, in the northeastern part of the state, where the new work around Osage is located, and the northeastern part of Niobrara, just south of Weston and near the Nebraska state line, where the Mule Creek pool is located.

Lance Creek, in Niobrara county has proved a false alarm and very expensive, but a little drilling is being done to hold acreage in dispute with the government's withdrawals that may be retained by complying with the new leasing law. South, around Mandeville, the excitement of two years ago has fizzled out.

Salt Creek, while only moderately active just now, is preparing to be very active, as the new leasing law permits shut-in wells and tied-up acreage to be opened. Three leases have been granted recently and permits issued to produce wells and develop. Salt Creek is fine oil territory and will be drilled as fast as Midwest refineries can treat the crude.

Reviewing the Results

In Carbon county, and the eastern edge of Sweetwater county, production is shallow and apparently confined to small pools, drilling machines being preferable to standard rigs. East of Lost Soldier 15 miles the Ferris field, with two producing wells, is being prospected, with the production seeming to be pretty deep and formations dipping rapidly, one test, five miles from a 1,540-foot well, being now below 4,300 feet with a showing. At Medicine Bow, Mahoney Dome, Separation Flat and just west of Laramie in Big Hollow prospect work is active. The Rock River pool, between Laramie and Ferris Dome, 12 miles southwest of Rock River station on the Union Pacific railroad, is the most active district now in Wyoming, except Osage and Mule Creek in the northeastern part of the state, and is also third in volume of daily production in Wyoming, Salt Creek being first and Big Muddy second, with Grass Creek pushing Rock River for third place—Salt Creek producing half of the state's entire oil, with 26,000 barrels a day actually run thru the lines and at least 30,000 barrels developed.

Eliminating Salt Creek, Big Muddy, Grass Creek and Elk Basin—all being fully proven and defined, therefore known quantities—from Wyoming's prospective oil areas, the Carbon county territory appears to offer greater inducements at this time than any other sections of the state, as the producing wells show better results to date, with approximately 7,000 barrels a day in sight. Latest developments indicate that more oil will be produced from the deep strata to 3,300 feet than from the shallow strata ranging from 300 to 1,500 feet, altho the small Lost Soldier pool has been very rich, 300 to 450 feet deep. In all of Carbon county, with a fringe of Sweetwater county, 40 producing oil wells constitute the record to date and three strong gas wells have also been drilled but are not in commission. Crude oil ranging from 20 gravity in Big Hollow showings near Laramie on the east, 32 gravity at Lost Soldier and 35 gravity at Rock River will reward the fortunate prospector.

Weston and Niobrara

When the Lance Creek field was at the height of its enthusiastic reception two years ago, prospect work covered quite a large area and took in the Mule Creek area in northeastern Niobrara county about 35 miles northeast of Lance Creek production. Ranging in depth from 1,250 to 1,425 feet what is called the Big Muddy formation produces an oil of 31 gravity, and 18 or 20 producers have been completed averaging about 40 barrels each, with two or three from 80 to 90 barrels. The Ohio Oil Company and the Midwest Refining Company are doing most of the work there. The pool is narrow east and west and extends north and south, with the best wells showing on the southeastern edge, and attempts to extend it are largely in that direction. The daily production is now about 800 barrels, the oil being handled thru a line to Dakoming, South Dakota, and shipped by rail from there to Casper and to Regina, Canada.

The Osage pool or district lies north of the Mule Creek pool, in Weston county, and involves broadly the area in which are located the towns of Osage, Newcastle, Thornton, Upton, and Moorcroft, the three latter places having claimed some petroliferous reputation for ten years but furnishing no commercial production. About a year ago excitement began, especially in the

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local and Denver papers and thru the organs of speech of land and lease owners and promoters, reports of thousand-barrel wells stimulating leasing and town-crowding activity. Except a little oil occasionally shipped for analytical purposes, no production of consequence has ever been developed commercially. The producing formations range from 600 to 1,100 feet in depth, with probably 950 to 1,050 feet at Osage as an average and shallower to the north and northeast toward Sundance, where the sand is supposed to outcrop.

The Mike Henry Oil Company of Douglas, Wyo., acquired considerable acreage in the Osage district and has subleased it on a royalty basis, a number of companies and individuals taking some of it. The Mike Henry Oil Company drilled the discovery well in Sec. 19-46n-63w, getting the oil at 1,250 feet. The well and considerable acreage were taken over by the Sinclair Oil & Gas Company. Just south of the discovery well, in the same section, the Midwest Refining Company found the sand a trifle lower. The Producers & Refiners Corporation drilled a test two miles southwest, in Sec. 36-46-64, with a showing of oil at 1,200 feet, abandoned. Two and a half miles northwest of the discovery well, in Sec. 11-46-64, the Midwest recently completed a test that is showing for some kind of a producer, and the Producers & Refiners is completing a test in the northeast corner of the southeast quarter of Sec. 25-46-64, to the south. Only a dry sand was encountered at the discovery well depth, but at about 1,545 feet—300 feet deeper—the hole filled up 800 feet and when eight feet in the sand 35 barrels went into the tank at one flow. It is estimated as a good producer.

Geologists now conjecture that the Osage territory is a monocline with a very slight dip to the west and southwest, the stratum being classified as Greenhorn. This monocline— or whatever it may finally be agreed to be—is traced on geologic maps as extending from northwest to southeast thirty or forty miles, from above Moorcroft to the Nebraska state line, with a supposed uniform depth level. The wells so far completed in the Osage district vary in depth at least 300 feet; this fact seems to tilt the monocline into a dipping anticline that is merged into a syncline, with a dome or two and several terraces added to give picturesqueness to the subsurface landscape.

Around Upton, Thornton and Moorcroft quite a number of wells have been drilled during the last ten years, the mild excitement of two years ago being around Upton and Thornton, where wells ranging in depth from 600 to 1,200 feet showed anywhere from one to ten barrels, with one actually putting 25 barrels in tank within 24 hours. The crude is of 42 gravity and of a lubricating grade. A few wells around Sundance, in Crook county, to the north, got a little oil of high gravity at 150 to 200 feet depth; the ten wells drilled out from Moorcroft ten years ago produced dark oil in small quantities at about 700 feet, and were abandoned after attempts to increase production by shooting and several kinds of pumping equipment had failed. Near Ardmore, just east of the Wyoming line in

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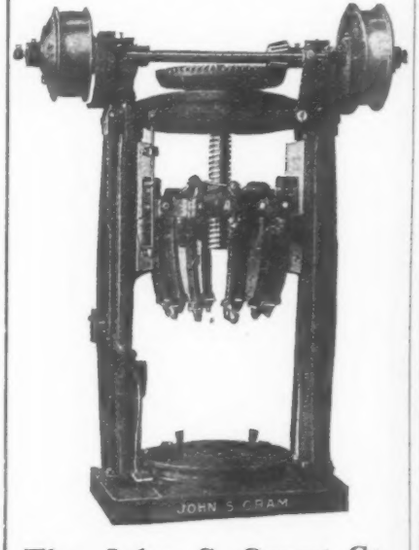

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SELDEN TRUCKS possess tremendous strength of construction and enormous pulling power. Actual records of users prove their cost of operation and maintenance to be low. There are no better trucks than SELDEN TRUCKS.

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South Dakota, a little shallow gas shows, but several tests drilled to 1,800 feet failed to discover any production, the sand from which oil may be expected apparently pinching out at the surface.

Notwithstanding the enthusiasm and reports of big wells coming from northeastern Niobrara and Weston counties, it does not appear that anything of much commercial importance has as yet been developed except the Mule Creek production in a limited area. Neither does it appear that geology has as yet located anything like regular producing formations. I have not been in that section of Wyoming since recent work has been started and cannot, therefore, be too specifically pessimistic without leaving a loophole for a comeback. However, I will give the territory a careful onceover in a few days, and can then review it with more certainty. With the data now in hand I am willing to be somewhat more conservative than the leading optimists.

Lance Creek Field

The failure of the Lance Creek district in Niobrara county to develop as the discovery well in Sec. 36-36n-65w indicated has been a great and expensive disappointment to many land and lease claimants and operators. The Ohio Oil Company's first test had an initial production of 2,000 barrels from sand found at 3,700 feet, 43.5 gravity, and started a tremendous lot of rig-building and drilling, besides causing the government to withdraw about 80,000 acres of land and thus start litigation. Sixteen producing oil and gas wells have been completed within two years, beginning with an initial production of 2,000 barrels from one, and today the total production of the field is only 700 barrels. A 6-inch pipe line 26 miles long was laid, steel storage provided and provision made for a big field and big production, even at the great depth and heavy expense of completed wells. Two gas wells showed volumes exceeding 50,000,000 feet, Lusk and adjoining towns throve, a 30-mile pike was completed, and all the stage effects of a great oil field were in evidence. Soon after the gas pressure found relief water began to rise in the holes, and now the production has been practically drowned out.

The two principal operators, not being familiar with cementing, employed the government's Bureau of Mines experts to take the field in hand and remedy the water troubles. A number of producing wells were worked on and cemented, and the first reports bulletined by the bureau stated that the work had been quite successful in recovering production and putting the field on its feet again. Late production reports from the field do not sustain the bureau's statements thus far, for the daily production seems to be declining and the water continues to be uncontrolled. It can be said to the credit of the bureau experts that when their methods failed they asked the operators for suggestions and assistance, admitting that the methods used had not produced the anticipated results, at least in any appreciable degree.

At this writing 35 wells are listed as drilling, but only 11 may be said to be actively in process of construction. There are 94 rigs up, but they were primarily erected on 160-acre placer claims for validation purposes, to be drilled later as the field developed. It does not now appear that these locations will be drilled, as a depth of 3,600 to 4,000 feet, with the attendant cost of $75,000 per well in many cases, is considered a poor speculation.

Wyoming Production

The report of operations in Wyoming for June shows fewer completions and less new production than for many preceding months, but drilling wells and rigs number about as many as usual, with the explanation that many in the drilling column are not active, as in the Lance Creek district. The list:

Field	Prod. Wells	Daily Prod.	Comp.	Drg.	Rigs	Gravity	Stocks
Salt Creek	209	25,800	4	14	18	38.0	305,000
Big Muddy	227	5,600	..	21	6	33.1	18,500
Grass Creek	313	4,100	1	2	..	43.7	96,000
Rock River	13	3,000	..	48	10	35.5	40,000
Lost Soldier	25	2,000	..	*42	5	*32.1	65,000
Elk Basin	103	1,900	4	5	1	45.1	13,000
Mule Creek	17	800	..	21	..	31.0	30,000
Lance Creek	16	650	1G	35	94	43.4	17,500
Maverick Springs	10	**500	..	..	4	21.5	**9,000
Lander	55	**500	..	..	2	20.0	**7,000
Poison Spider	5	225	..	5	4	17.6	.....
Pilot Butte	23	200	..	1	2	23.6	9,700
Byron	16	80	..	2	..	44.3	.....
Greybull	75	40	..	..	1	***20.0	.....
Thornton	7	25	..	2	..	42.0	.....
Torchlight	22	12	..	..	..	47.0	.....
†Thermopolis	..	..	..	..	..	20.5	.....
Sand Draw	3	Gas	..	..	7	46.7	.....
Miscellaneous	12	15	..	5	10	....	.....
Totals	1,150	45,447	10	203	164	....	310,700

*The gravity of Lost Soldier is that of the crude produced in that small pool. Two wells a Ferris Dome, 15 miles east of Lost Soldier, produce oil of 42 and better gravity, field work bei.. listed under the Lost Soldier head.

**The figures of daily production and stocks at Maverick Springs and Lander are estimates, as operations there for some months have been almost at a standstill, and no runs of oil have been made. Some estimates of 1,800 barrels a day for each district are made, but the last authentic data at hand were much lower than that. The Wind River refinery, not operated for some months, has been taken over by new people, with an agreed daily production of 300 barrels tendered by the Wind River concern, and also some storage oil from the English concern owning the oil fells at Dallas.

***The gravity given to the Greybull oil is that of the black oil produced at Spencer, just north of Greybull, which, it is thought, embraces all the present activity in that immediate district. At least 100 wells were drilled in and around Greybull some years ago, the highest gravity of the oil being 54 degrees, Be., with much more of 45 and 47 gravity. Many of those old wells have been abandoned, and it is not known at this writing how many of the 75 listed producers are in the light-oil belt.

†Not having latest data at hand no attempt is made to present Thermopolis details. These data will be given later.

The stocks as listed are in steel tanks at refineries and in the field. The Maverick Springs oil is supposed to be in eastern reservoirs.

(Continued on page 50)

Quality—

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The photograph above shows a battery of agitators at the Independence, Kansas, plant of Empire Refineries, Inc., which are capable of handling 5,000 barrels per day.

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Gravity..... 29–36	Viscosity....100@212	Emulsion..... OK
Flash..... 440–450	Cold Test.... 35	And is a product of our
Fire..... 500–510	Carbon.....1%	Famous Franklin Crude.

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LOS ANGELES CALIFORNIA

(Continued from Page 46)

Two years ago, when many wells in the Salt Creek field were kept shut in by government orders pending litigation, and when Lost Soldier and other new fields had no pipe line outlets, including Maverick Springs, Lander, Thermopolis and scattered wells, the so-called potential production of Wyoming was quite generally put at 60,000 barrels a day. As the pools were connected and wells regularly produced—except in Salt Creek—the state's production, actual and potential, is all being regularly run and marketed, with the result that 46,000 barrels cover it, if we omit the wholly negligible production of black and practically unrefinable crude at Maverick Springs, Lander and Thermopolis. It may be taken for granted that present production in Weston county is of no commercial importance at this writing, whatever it may develop into later.

There is a small refinery running on the Byron crude at Cowley, in the northwestern part of the state, the unoperated 500-barrel plant at Lander, and a small plant controlled by the McWhorter interests in Weston county (the same interests having just agreed to take over and operate the Wind River Refining Company's plant at Lander). The Midwest Refining Company's two refineries at Casper and Greybull, the Mutual Refining Company's 2,000-barrel plant at Glenrock operated now by the Midwest, and a small plant at Thermopolis receive Wyoming's production. The Midwest Refining Company has, or did have, an operating agreement with the Utah Oil & Refining Company at Salt Lake by which the plant received its crude from Wyoming. By August 1 the Midwest will be operating its 3,500-barrel plant at Lander, using Rock River, Lost Soldier and Ferris Dome crude.

Ships to Regina

The Ohio Oil Company ships considerable of its crude production to the Standard Oil Company (Imperial Oil Company, Ltd.) refinery at Regina, Saskatchewan province, and the United Oil Company (Continental Oil Company, Denver, Standard) uses some Wyoming crude at its Florence, Col., refinery.

The Midwest Refining Company is just putting into operation a battery of six new stills at its Casper plant, giving it a listed capacity of 50,000 barrels, and its Greybull plant can handle about 15,000 barrels. An 8-inch line from the Salt Creek field to Casper is nearing completion, when approximately 50,000 barrels a day can be piped to the Casper refinery. The present lines are delivering to the Casper refinery approximately 25,000 barrels daily. It is expected that the shut-in wells, when in full production, with active drilling that will soon follow settlements with the government in re withdrawn acreage and resultant clear-listing of all producing acreage, will increase Salt Creek production to 35,000 or 40,000 barrels a day, and that can be increased by more active drilling.

It will thus be seen that present refining and pipe line capacity is taking care of all Wyoming production and that new pools must be discovered and those now being developed must be active to maintain refining demand. It requires capital to operate in Wyoming, to develop proven acreage and prospect new territory to profit-

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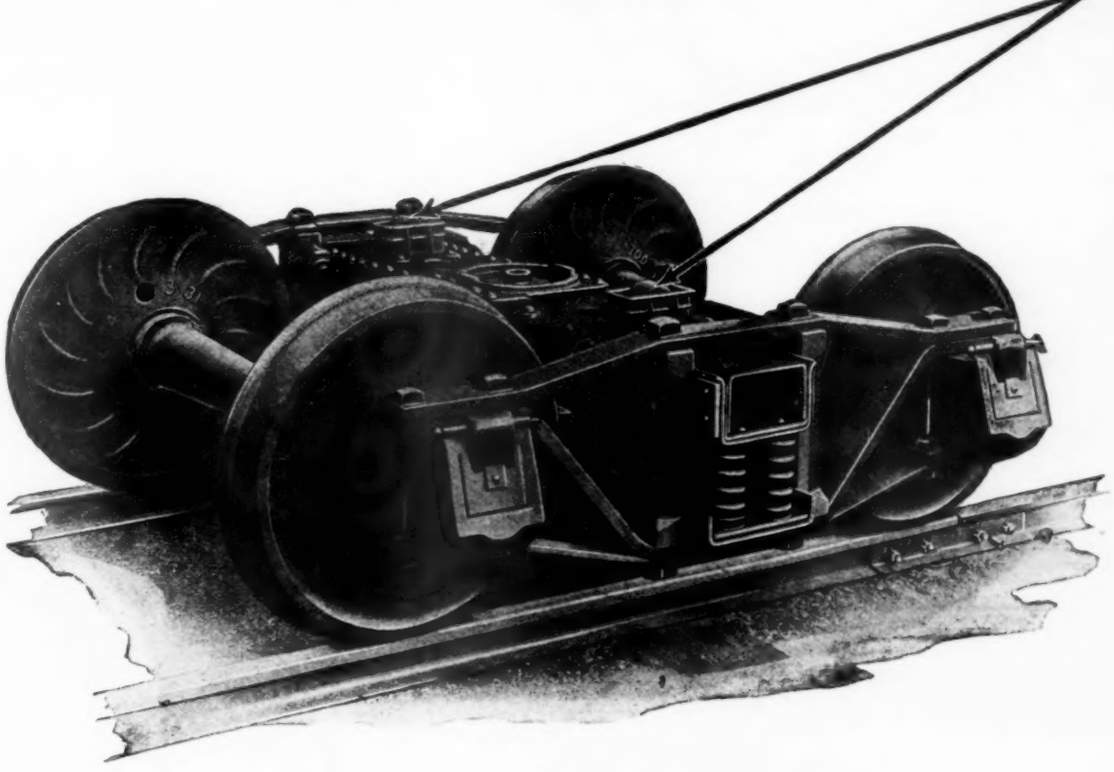
Usual tank car requirements do not demand roller side bearings. Yet we spend thousands of dollars in equipping "Car Foundry" cars with them. First, because they reduce strains on trucks and flange wear on wheels. Second, because they allow cars to enter and leave curves with minimum danger of derailment.

This is only a detail, of course; but many such details combined are the factors which determine cost of operation and length of efficient service.

Many buyers do not know that they get roller side bearings with our cars. Nor do they bother to investigate other exclusive features which involve extra expense in building.

But experienced buyers do know that "Car Foundry" Tank Cars give them unusual service. And this extra service is due to just such improvements in details as are being illustrated in this series of announcements.

The design of our castings has been carefully worked out with the foundry by our Engineering Department, with the object of eliminating foundry losses, because, when such losses are reduced to a minimum, the internal strains set up in the castings and failures in service are likewise minimized.



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21

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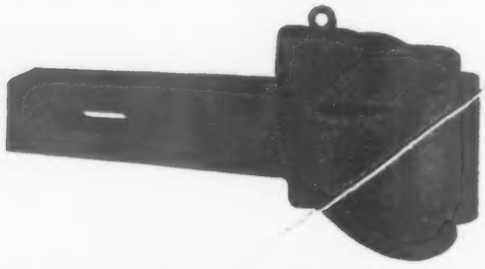

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able production. This fact is now pretty generally recognized, causing promoters, tenderfeet and speculators to keep out, leaving the field to operating companies of practical experience and the necessary capital to carry all operations to successful development and completion. After several booms have come and gone, it, Wyoming, is not now the field in which promotions can be successfully staged for any length of time. The 1920 development in Wyoming, Montana, Utah, New Mexico and Rocky Mountain territory generally rather insistently illustrates and demonstrates the normal conditions necessary to the efficient and profitable development of any oil territory, no matter where located or of whatever producing capacity Perhaps if so many skilled and unskilled operators had not bit off more than they could chew in north Texas, northwest Louisiana and a few other alleged phenomenal oil fields more of them might be in Wyoming, Kentucky, California and other comparatively light-well territory. But that phase of the petroleum industry edges into metaphysical and psychological territory, where no perfected processes have so far been able to make both ends meet, and will be left to the research departments of colleges and governments.

Sizes Up Tonnage Of Tanker Fleet

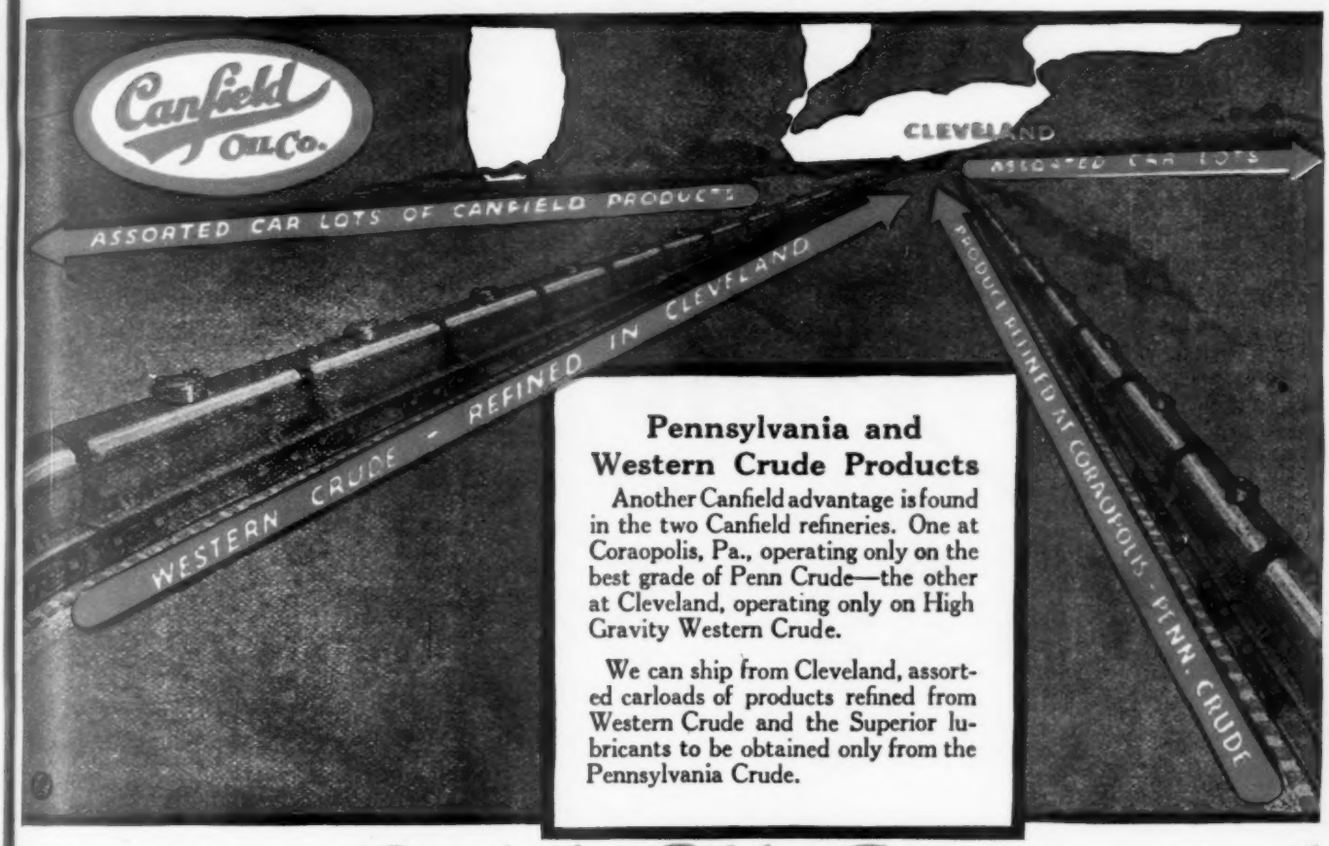
NEW YORK, July 25.—Discussing the relaton of tanker tonnage to the production of oil, the Lamp, a publication gotten out by the Standard Oil Company of New Jersey for its employes and stockholders, says:

"Upon January 1 last, the world's total gross tanker tonnage was 3,082,495 tons, the equivalent of 4,315,493 deadweight tons, represented by 678 tankers, and of these 4,035,309 deadweight tons were available for ocean trade, the remainder being absorbed as fleet tankers in the navy, the molasses trade and other services not entering into a general calculation. The ocean tonnage on the customary figuration of 6½ barrels of oil to a deadweight ton represents a capacity of 26,200,000 barrels of 42 gallons each.

"On the basis of tonnage more than half of the tankers are about evenly divided between Mexican trade and trans-Atlantic service. The statistics of tanker tonnage in service show in the former that during 1919 there were employed 1,227,600 deadweight tons capable of making ten voyages to the United States, nine to Canada and seven to Europe each year, with a total carrying capacity of 74,000,000 barrels. In the trans-Atlantic service there were employed 1,275,382 deadweight tons, capable of making six voyages a year on which should be carried 50,000,000 barrels. Next in importance was the Indian trade, with 606,808 deadweight tons.

"The annual carrying capacity of the 4,035,309 deadweight tonnage available for ocean trade employed as outlined in the above services was 216,000,000 barrels of 42 gallons capacity. The estimated world production of petroleum in 1919 was 551,690,672 barrels. Therefore, 39 per cent of the world production was water-borne.

"The shortage in tanker tonnage which has existed for the past five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We can ship from Cleveland, assorted carloads of products refined from Western Crude and the Superior lubricants to be obtained only from the Pennsylvania Crude.

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years has become acute more recently by reason of the war losses and the increased consumption, and the vessels at present under construction and under contract to make up this deficiency will increase the tonnage available by 2,100,000 deadweight tons. Thus there is in immediate prospect a fifty-two per cent increase in tanker tonnage, and an enlargement of carrying capacity of 112,000,000 barrels per year, providing the tonnage is distributed over all the carrying trades in the same proportion as in 1919.

"The tanker tonnage available was, of course, inadequate to the requirements of the Mexican trade in 1919, and had sufficient charters been obtainable a much larger volume of crude would have been moved from that country. It is evident that this situation will be steadily improved as the new tonnage comes into commission. Should all of the trades, with the exception of Mexico, covered in the statistics of 1919 referred to above, absorb 20 per cent more tonnage, there would still be available from new tonnage 1,540,000 deadweight tons for the Mexican trade which would transport 93,000,000 barrels per year.

"The statistics of production and of present and future tanker tonnage appear on the face of them to be ample evidence that the petroleum industry has at last caught up, and will at least keep pace with the requirements for water transport of petroleum products."

New Patents

The following patents relating to equipment and apparatus used in the oil industry have been granted since the date of last report in these columns.—Editor.

No. 1,340,427.—Art of and apparatus for cooling and condensing gasoline or light vapors, to Austin A. Wehr, Baden, Pa., filed July 2, 1919; 4 claims

1. In the art of producing gasoline and light oil from vapor, a step which consists in compressing the vapor in an accumulator chamber and thereby separating a certain portion of liquid from the vapor, causing a certain portion of the vapor in said chamber and under relatively high compression to become suddenly expanded in a relatively large chamber to thereby suddenly reduce the pressure and cause intense cold within the chamber, and conducting the remainder of the vapor from said accumulator chamber thru said cooler chamber to thereby cause the condensation of the gas.

No. 1,340,472.—Deep well pump, to Herbert J. Woock and Walter R. Woock, Lodi, Cal., assignors to the Superior Manufacturing Company, Lodi, Cal., filed April 24, 1919; 6 claims.

6. A pump for deep wells, comprising a plurality of rotary pump units spaced apart, each unit comprising an upper and a lower casing spaced apart and connected by a third casing, the first named casing being adapted for connection with well casings and being

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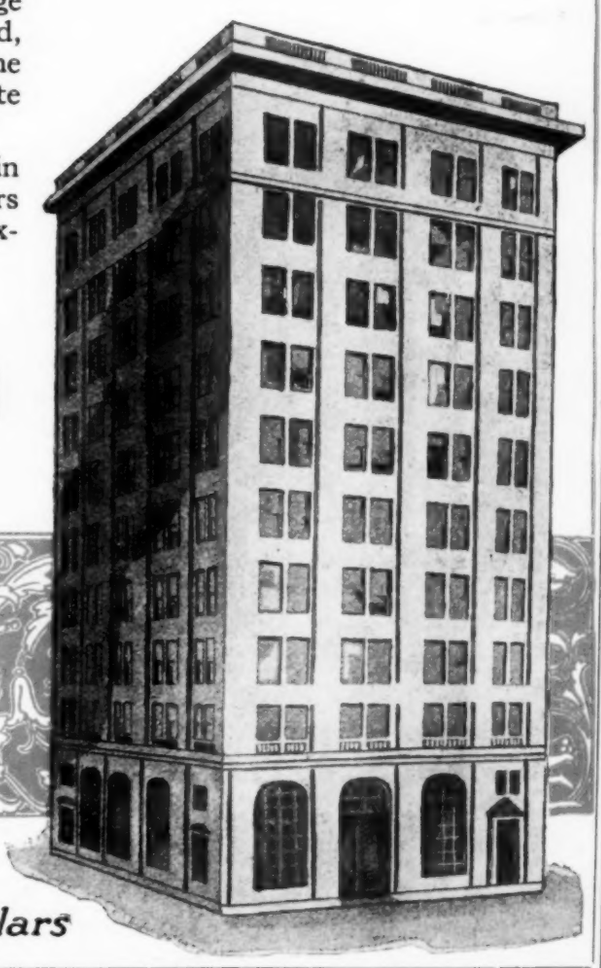

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General Offices:

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provided with bulbs central thereof, a sleeve turnably mounted in the hubs and extending from one to the other, the sleeve being adapted for sliding driving connection with independent drive shafts at its upper and lower ends, an inclosed spiral pump runner keyed to the sleeve between the first two named casings and having a running fit with the walls of the third casing, and means whereby the sliding and rotatable members will be automatically lubricated with the rotation of the driving shafts, such means including chambers in the hubs and sleeves adapted to contain oil, a reservoir formed in one of the casings in communication with the chamber in the sleeve, a screw conveyer operable with the rotation of the pump runner adapted to lift the oil contained in the reservoir and distribute it about the bearing parts of the runner and means whereby surplus oil will drain into the reservoir.

No. 1,340,532.—Apparatus for the distillation of oil, to Samuel D. Faust, Pittsburgh, assignor to the International Gasoline Process Corporation of Delaware, filed March 10, 1919; 3 claims.

1. In an apparatus for distilling oil, the combination of a plurality of individual continuously-connected pipes forming a continuous coil of two sections for the passage of the product, a plurality of individual continuously-connected pipes within the pipes comprising the lower section for the passage of steam from a suitable source of supply to heat the product, and a plurality of individual continuously-connected pipes within the pipes comprising the upper section for the passage of steam from a superheater to superheat the product and its distillates.

No. 1,340,600.—Turpentine substitute, to Marc Darrin, Wilkinsburg, Pa., assignor to the Koppers Company, Pittsburgh, filed May 8, 1919; 7 claims.

7. A turpentine substitute containing a mixture of about 5 to 30 per cent oxidized turpentine and 70 to 95 per cent solvent naptha.

No. 1,340,793.—Oil-cracking apparatus, to Willard B. Poole, Okmulgee, Okla., assignor to Poole Oil-Cracking & Refining Company, Yuma, Ariz, filed December 28, 1918; 5 claims.

1. An apparatus having superposed separated heat chambers with heating means independent of each other, a still located within the lowermost heat chamber and spaced from its walls for the circulation of heating gases in said chamber about the major portion of said still, an inlet tube extended thru the remaining upper chambers and connected with the upper portion of the still, and an outlet tube extending thru said remaining upper chambers and connected with the still.

No. 1,340,803.—Liquid-fuel burner, to Earl H. Tate, Los Angeles, Cal.,; filed December 18, 1918; 2 claims.

1. A burner comprising a body of Y-shape, an inverted U-shaped pipe having its ends connected with the ends of the Y, a jet carried by said pipe for directing the flame downwardly toward the body part and a plate located between the arms of the body and the body at the junction of the tube therewith.

PRODUCTION SECTION

Tulsa Bureau
408 Cosden Building
J. B. Gambrell, Jr., Manager

Houston Bureau
303 Lumberman's Bank Building
Paul Wagner, Manager

Three Oklahoma Pools Bear Brunt; Gulf Coastal Field Gets "Gushers"

OKLAHOMA operators are coming to realize more and more clearly each week that tho many small pools may be opened which will augment the total production of the state, the substantial or lasting increase in production must be expected for this summer at least from three sources, namely, the greater Okmulgee district, which is now producing in excess of 55,000 barrels daily, the Osage Reservation with a daily production of 50,000 barrels, and the Hewitt field with pipe line runs of 26,000 barrels daily.

It is these producing areas with their wonderful stamina, consistency, deeper drilling potentialities and undefined limits that are producing the bulk of the 60,000 barrels of new production that Oklahoma has recorded since the first of January.

The next month will see the peak of Kansas wildcatting and the results accomplished may be totaled up at this time. At the present time several small pools opened up in this district have so far failed to live up to expectations.

Gulf Coastal Pool is Extended

While new completions in the Rising Star territory of southwestern Eastland county continued to draw attention to that area, operations in the Gulf Coastal country took precedence over the northern part of the state. Ranking in importance is the bringing in of a well rated at more than 20,000 barrels daily, by the Texas Company, an extension of three-quarters of a mile to the northwest of the West Columbia pool, heretofore confined to an area less than 100 acres in scope. Humble Oil & Refining Company on the east edge of this pool completed a well with initial flow of 8,000 barrels daily.

Reports from Mexico credit the Los Naranjos territory with a completion estimated at 50,000 to 75,000 barrels daily. This well, belonging to the Mexican Gulf Oil Company, is one of the shallowest completions in this territory. Union Oil Company's well on lot 114 Chinampa, is estimated as good for 85,000 to 100,000 barrels.

Louisiana New Production Slumps

So far as initial production of new wells was concerned, North Louisiana failed to keep up with the pace of the previous week, 27 producers yielding 5,751 barrels, a drop of nearly 3,000 barrels from the new production figure of the previous trade week. The best individual producer of the week was in the Homer pool and made 1,500 barrels initial. All completions were of the "inside" variety.

Kentucky operations were marked by a number of good wells, chiefly in the western and defined part of the state. What appears to be the biggest well in several weeks has just been drilled in by the Tide Water Oil Company in the Stringer pool of Simpson county. It is estimated at 1,000 barrels daily.

In the eastern fields completions were routine. The best was that of the Continental Oil & Gas Company on the B. F. Weaver farm on Little Laurel run of Tanners' Creek, Gilmer county, West Virginia. Pay is in the Maxon sand and the flow was 100 barrels daily after a shot.

Late Field News

Staff Specials

FORT WORTH, July 26.—Two additional wells in the newly developed pool six miles northwest of the town of Rising Star, southwestern Eastland county, indicate further possibilities for this part of the black lime producing area. No. 1 Hitt, of Hoffman and Collum, a half mile north and a little east of the original Hilborn well of Foster, Phillips et al, came in at about 3,135 feet making a maximum of 70 barrels an hour. Offsetting the original Hilborn which was good for 400 or 500 barrels originally in the northwest corner location on a 160-acre tract, the Invincible Oil Corporation's No. 1 Shook is in, flowing over the derrick at 3,160 feet and rated as a 2,000-barrel well or better. In the southwest corner of the Hilborn tract, the second Foster, Phillips et al well was completed ten days ago for 2,400 barrels initial.

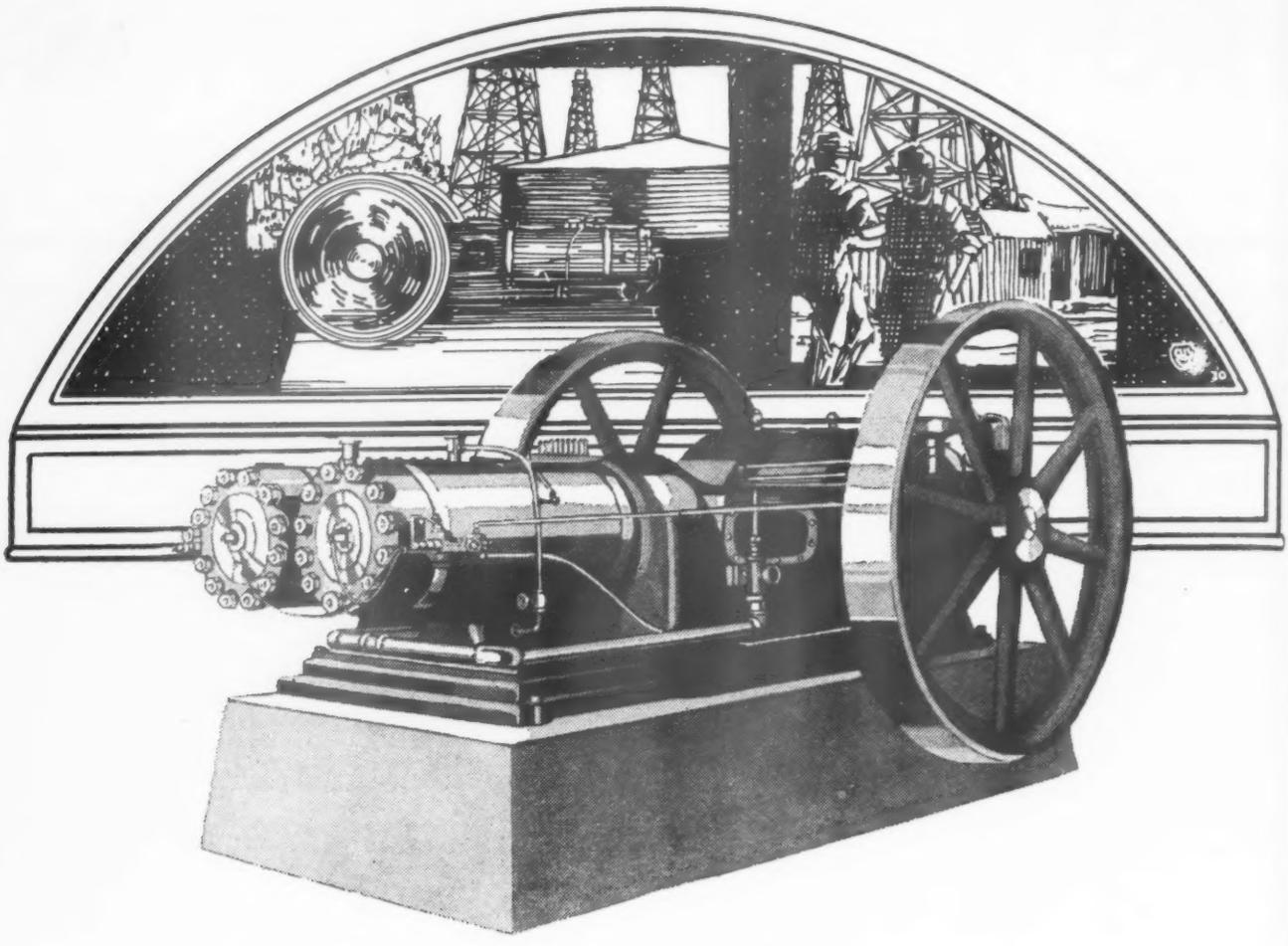
In northern Stephens county, a mile and a half southeast of the group of 25 or 30 wells surrounding the Prairie Oil & Gas Company's Lyden the Mid-Kansas Oil & Gas Company's Douglass is a completion at 3,250 feet, starting off at 75 barrels an hour.

HOUSTON, July 26.—The Texas Company's No. 1 Abrams, which opened up new territory northwest of previously known production at West Columbia, a Gulf Coastal pool, is still holding to its maximum production of 25,000 barrels daily, which it was shown to be good for when a test of its worth was made possible.

TULSA, July 26.—Guffey-Gillespie Oil Company has nice well flowing 42 barrels an hour in No. 18 in northeast corner of northwest Sec. 34-22-10 in Osage Reservation. Sand found at 1,880-1,896 feet.

Lake Maramec Oil Company's wildcat in Sec. 4-20-6, near Maramec, which stopped flowing last week, has been cleaned out and is again flowing 12 barrels an hour.

TULSA, July 26.—Wildcat of Shaffer Oil & Refining Company in Sec. 4-21-6e, Pawnee county, has show of gas at 3,911 feet and is moving boiler back preparatory to drilling in. W. T. Hales et al wildcat in southeast corner northeast Sec. 36-18-4e, Pawnee county, is showing oil and gas at top of Skinner sand at 3,265 feet, and is preparing to drill in. This well is located one mile west and a half mile south of production in newly discovered pool northwest of town of Cushing.



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BESSEMER
OIL FIELD EQUIPMENT

Pool Extensions And Wildcat Showings Feature Week In Oklahoma

Staff Special
TULSA, July 24

DAILY crude oil production for Oklahoma, tho showing an increase, still falls short 1,300 barrels of the much desired 300,000-barrel mark. Estimated daily production during the past week was 298,700 barrels, divided among the following fields: Cushing, 34,700 barrels; Healdton, 30,000 barrels; Hewitt, 26,000 barrels; other fields, 208,000 barrels.

While operators are somewhat disappointed that the past week's production did not reach the goal set in the early spring, there were a number of developments that give the general production situation a favorable aspect, the principal ones being: A 1,000-barrel Wheeler sand well in the northwest extension of the Cushing field in Payne county, which is the first producer from the Wheeler horizon in this new pool; northwest of Edmond, near Oklahoma City, a wildcat is showing for a commercial producer; the Hewitt field of Carter county was extended to the east by a 600-barrel well, and four miles southeast of Elgin, in northeastern Comanche county, a wildcat is estimated at 50 barrels daily.

Kansas production continues to hover around the 95,000-barrel mark, fluctuating from week to week. Figures for the past week show El Dorado-Peabody-Elbing, 67,000 barrels; Augusta, 11,100 barrels; other fields, 17,000 barrels; total 95,100 barrels. Little of importance has developed in Kansas operations in the past week, the most important happening being the completion of a well in the heart of the El Dorado pool making slightly better than 1,900 barrels initial. The discovery well of the New Young pool, recently opened up 15 miles southeast of El Dorado, is holding up consistently to 300 barrels on the pump.

Hewitt

A quarter of a mile in advance of production to the east, the Carter Oil Company's No. 1 on the Eva Heffner farm in the southwest corner of the northwest of Sec. 23-4S-2W found sand at 1,666 feet and at 12 feet in is making 600 barrels. This well is a half mile north and three-eighths of a mile west of the same Company's No. 1 Hamilton in the southwest corner of the southeast of the southwest of Sec. 23-4S-2W, which recently extended the field and is now making 250 barrels.

Northwest of the proven area, the Caddo Petroleum Company's test in the southeast of Sec. 17-4S-2W, which found a show of heavy black oil with an asphalt base in a sand found from 2,062-2,065 feet, is drilling at 2,253 feet. While the upper pay horizon was not tested out, it is estimated that it would make a 6-barrel pumper, as over 400 feet of oil is standing in the hole.

Cushing

The discovery of the White Oil Corporation, of a 1,000-barrel Wheeler sand well in what is termed the northwest extension of the Cushing field, Payne county, has done much to hearten operators developing acreage in this territory as the majority of production in this pool is coming from the Skinner sand horizon and several tests lately have failed to find this pay. The White Oil Corporation's Wheeler sand producer is No. 3 Ashford farm in the southwest corner of Sec. 29-18-5E. Sand was found at 2,970-3,020 feet.

Some of the wells in this field that have apparently reached hopeless levels are the following: Phoenix Refining Company's No. 1 Dixon, center of west line of the southwest of the northeast of Sec. 27-18-5, depth 3,650 feet; Skelly Oil Company's No. 1 Harris, southeast corner of the northwest of the southeast of Sec. 28-18-5, total depth 3,650 feet; Shaffer Oil & Refining Company's No. 1 Scott farm, in the southeast corner of the northeast of Sec. 19-18-5, depth 3,810 feet; Thompson et al No. 1 Craig farm, in the southwest corner of the northwest of the southeast of Sec. 28-18-5, depth 3,800 feet; Texas Company's No. 1 Townley farm, in the northeast corner of the northwest of the northeast of Sec. 32-18-5 which is showing nothing at 3,680 feet.

Greater Okmulgee District

On the north edge of the Phillipsville pool, in the Beggs district, the Skelly Oil Company and Southwestern Petroleum Company No. 1, in the southwest corner of the northeast of the northeast of Sec. 22-14-11, found sand from 2,765-2,796 feet and is making 1,000 barrels. This is the largest well completed in Okmulgee county during the past week.

The most significant completion in this district, however, is the Shaffer Oil & Refining Company's No. 1 on the Bruner farm, in the center of the east line of the southeast of the southeast of Sec. 8-14-11, which is making 600 barrels in the Dutcher sand found from 2,447-2,455 feet. This well is located in a district that has been characterized by extremely light wells.

Osage Reservation

Latest statistics compiled by one of the larger oil companies shows that this county is now producing, roughly, 50,000 barrels a day. The large increase in production in this territory may be ascribed to the deeper drilling campaign launched a few months ago by several of the larger companies and operators. This campaign is not advanced sufficiently at this time to the point where an estimate of its value can be made. However, it has undoubtedly resulted in a large volume of flush production and handsome royalties for the "poor Indian."

No area of like size in the Mid-Continent field has to its credit as many "freak" producers. Wells come in producing from a break in the Mississippi lime at the rate of 5,000 or 6,000 barrels daily, cease to flow without reason, become rejuvenated in a like manner, and burst forth at any rate. The past week has witnessed an exemplification of this. While pumping 100 barrels, the Gypsy Oil Company—Skelly Oil Company—Phillips Petroleum Company No. 1 Bearcat, in the northwest corner of Sec. 20-22-10, broke loose at the rate of 3,000 barrels a day. It is still flowing, but averaging 200 barrels at the present time. According to the Production Department of the Gypsy Oil Company, some days it ceases to flow entirely. Probably on the next day or so it will flow several hours in a stretch. It originally was brought in last April and started off at 500 barrels an hour. Several other wells have shown similar characteristics recently.

The largest completion recorded in the Reservation is the Gilliland Oil Company's No. 1 in the southwest corner of the southeast of Sec. 26-23-7 which came in with an initial production of 6,000 barrels in sand found from 2,717-2,780 feet, and settled to 2,000 barrels. It has been drilled one foot deeper and, according to latest reports, is making 4,000 barrels.

Other Important Happenings

In Carter county, the Lone Star Gas Company test in Sec. 17-3S-4W, is making 24,000,000 feet of gas in sand found from 1,618-1,624 feet. It is located between the Healdton field and the gas field of Loco. The completion of this well brings to mind a rather interesting angle of the Lone Star Gas Company's operations in southwestern Oklahoma. This company foresaw an acute gas shortage in Dallas and Fort Worth (who rely on the Lone Star Gas Company for their supply), and invested in acreage in this territory which at the time of purchase had every indication of being the most likely gas producing area in the Mid-Continent. However, most of their drilling operations resulted in commercial oil producers rather than gas wells and this fact is, to a large extent, responsible for the Lone Star Gas Company entering into the producing of oil.

In Grant county, the Western States Oil & Land Company test on the Stewart farm, in the northeast corner of the southeast of Sec. 22-27-3W, near Deer Creek, Oklahoma, encountered sand at 2,430 feet and at 5 feet in, is making 12,000,000 feet of gas. This is the first commercial producer in Grant county and will result in increased drilling activities in this territory. The Western States Oil & Land Company is a subsidiary of the Midwest Refining Company and the above well is

understood to be the first well completed in the Mid-Continent field in which the Midwest Refining Company is interested.

The wildcat of the Nogle Refining Company, located in the southwest corner of the southeast of Sec. 17-14-3W, near Edmond, is reported to be showing for a commercial producer. It found six feet of lime and a broken oil sand from 1,980-2,014 feet and is showing quite a bit of oil and a little gas. Having been drilled with a rotary, however, its value can not be determined until a string of pipe is set on top of the sand and a thoro test given.

Nothing of importance occurred in the Empire pool near Duncan, in Stephens county, the past week. Operators are still watching the result of Cosden & Company's test in Sec. 15-1S-8W mentioned in last week's resumé.

In northeastern Comanche county, four miles southeast of Elgin, the Gladys Bell Oil Company's test in Sec. 17-3N-10W, found sand at 1,040 feet and at 12 feet in, has a good showing of oil. However, being drilled with a rotary, it will be necessary to set casing before testing it out. It is eight miles south of the nearest production which is the little shallow field near Lawton, Oklahoma.

Kansas

The most substantial production in Kansas at this time, outside of the older fields, is that which is coming from the Covert-Sellers pool. Completions in this pool are, to a large extent, offsetting the decline of the older fields. While no important extensions were recorded in this pool, several large caliber wells were completed during the past week, the principal ones being: Ward & Wilhoit's No. 6 Covert in the southwest corner of the southeast of the southwest of Sec. 21-21-4. Sand was found at 2,364-2,374 feet and it is making 400 barrels. The same parties' No. 1 on the same lease found sand at the customary depth and is making 525 barrels.

Recent rains have solved the water problem temporarily for operators planning to develop acreage in the new Young pool discovered by the Columbus Oil & Securities Company in Sec. 27-26-7. It is located near Rosalia in eastern Butler county, 15 miles southeast of El Dorado. The Empire Gas & Fuel Company owns practically all the acreage near this well and will immediately drill an offset.

The Brown Ranch Oil Company is endeavoring to re-run 5-inch casing in its test on the Craft farm in Sec. 9-29-7, west of Latham. This test is having water trouble and at present has 300 feet of fluid in the hole. It was expected that this test would make a well until water broke in.

MUSKOGEE, OKLA., July 24.—A bond of $1,500,000, the largest ever set in United States district court here, is required of Samuel L. Morley, of McAlester, and George B. Noble, of Oklahoma City, named by Judge R. L. Williams as joint receivers in the famous Barney Thlocco oil case to succeed J. F. Darby, of Tulsa, who has resigned.

More than $1,400,000 in cash has accumulated from the Thlocco oil properties during the eight years in which the case has been before the courts. Compensation for the receivers is limited to 1 per cent of the earnings, now approximating $25,000 a month.

Get the habit of turning to the Oil Industry Exchange page each week. Business opportunities of various kinds and bargains in second-hand equipment are always to be found there.

North Louisiana Development Records Drop In Combined Initial Production

By Special Correspondent

SHREVEPORT, LA., July 23.—During the week just closed there were 41 completions in the north Louisiana fields, including 27 producers yielding initial production totaling 5,851 barrels, compared with 29 completions and 21 producers with combined initial production 8,628 barrels during the previous week. As shown by the totals, there were six more producers the past week, but the initial production was nearly 3,000 barrels less than during the previous seven days

The past week's report shows 12 failures, just twice as many as during the previous week. In the number of gassers, there was no change, two being the total.

In the Homer district there were 18 completions, of which six were failures, all due to salt water. The 12 producers yielded 4,071 barrels initial production, compared with the previous week's Homer record of five failures and 11 producers yielding 6,254 barrels. Bull Bayou showed nine producers, two wells junked and one gasser, the initial production totaling 1,445 barrels, compared with the previous week's record of 5 producers making 1,995 barrels, one failure and one gasser. In Caddo there were six producers making 335 barrels, against five producers and 379 barrels the week before. There were two failures, however, against none the previous week.

The only completion in east Texas was a failure, being the Pickering Lumber Company No. 12 of the Texas Company, on the Simpson headright, which at 3,576 feet came in dry, in Shelby county.

In the Arcadia district, Bienville parish, McBride No. 2 of Folse et al, Sec. 16-19-5, went to 2,115 feet, when it was junked and abandoned, July 16. This further blasted hopes of finding pay in Bienville parish, which is south of Claiborne.

In the Wistor district of Bossier parish, the Louisiana Gas & Fuel Company's Woodson No. 1, in 10-16-11, came in at 2,455 feet, as a gasser with capacity 30,000,000 cubic feet. The other gasser of the week was in the Naborton district of De Soto parish, where the Texas Company's Roberts-Brown No. 2 in 17-12-11 at 2,875 feet was a gasser with 7,000,000 cubic feet capacity.

Two Producers at Vivian

In Caddo, the Vivian district yielded two producers, namely: Peak No. 10, at 1,055 feet, in 23-22-15, 100 barrels, and the Hoss No. 17 in 24-22-15, at 1,060 feet, 80 barrels, both belonging to the Louisiana Consolidated Oil & Refining Company. The Caddo district showed four completions, all producers: Congressional Oil Company's Herndon No. 3, in 22-21-15, at 2,290 feet, 15 barrels; Bedillion et als' Christian No. 1 in 31-20-15, at 2,284 feet, 5 barrels; Cherokee Oil Company's Youree No. 5 in 12-21-15, at 2,310 feet, 60 barrels; and Dixie Oil Company's Robertshaw No. 32 in 14-21-15, at 2,305 feet, 75 barrels. The other two completions in Caddo were failures, the Swann No. 1 of Swann Oil Company in 20-21-14, Belcher district, salt water, at 923 feet, and the Wasson Oil & Gas Company's Wasson No. 2 in 26-19-15 at 3,030 feet, salt water, being in the Blanchard district.

Of the six failures in the Homer district two were in 30-21-7, the original section, both belonging to the Rowe Oil Corporation, the Shaw No. 8 at 1,503 feet, and the Shaw No. 20 at 2,136 feet. Other Homer abandonments were: Calcasieu-Claiborne Oil Company's Gryder No. 1 in 14-21-8, at 1,900 feet; Keen & Woolf's Herold No. 1 in 19-21-7, at 2,140 feet; Standard Oil Company's Palmer-Langston No. 14 in 24-21-8 at 1,291 feet, and the same company's Wheaton No. 2 in 23-21-8 at 1,585 feet.

The best individual record during the week was by the Louisiana Oil & Refining Corporation which got three producers with combined initial production 2,050 barrels, all being in section 24-21-8, on the Jackson lease, being Jackson 26 at 1,401 feet, 1,300 barrels, Jackson 27 at 1,568 feet, 400 barrels, and Jackson 28 at 1,365 feet, 350 barrels. Jackson No. 26 was the biggest completion of the week.

In Sec. 18-21-7, Homer, there were four completions, but not all by the same company. One was Garrett No. 1 of the Curtis Bros. & Nelson, at 1,476 feet, 200 barrels; two others were Garrett No. 6 and Garrett No. 7, both belonging to F. C. Henderson, the former being 200 barrels at 1,445 feet, and the latter being 250 barrels, also at 1,445 feet; and the fourth was a Gulf well.

Two other completions on the Garrett land were brought in by the Simms Oil Company in 17-21-7, being Garrett No. 10 at 1,447 feet, 200 barrels, and Garrett No. 13 at 1,453 feet, 50 barrels.

Gulf Gets Three Wells

The Gulf Refining Company, whose record equalled that of the Louisiana Oil & Refining Corporation in number of completions, got three producers, one of them, the Garrett No. 2 in 18-21-7, at 1,436 feet, 127 barrels, and the other two, West 21 and 22, at 1,350 feet and 1,335 feet, the former making 440 barrels and the latter 429 barrels.

While the Standard got two failures, the week was not unproductive for it, because it completed Shaw-Palmer 15 in 25-21-8 at 1,420 feet, making 125 barrels, Homer district.

In the Bull Bayou district (Red River parish) there were four completions, all producers, in 6-12-10. Two were by the Seamans Depositors Company, being Polley No. 11, at 2,765 feet, 40 barrels, and Polley 13 at 2,785 feet, 50 barrels; another was the Doan Oil Company's Nelson 9 at 2,825 feet, 50 barrels, and the fourth was the Fortuna Oil Company's Pugh 35 at 2,810 feet, 490 barrels.

In 5-13-10, Red River parish, Belchic & Laskey went to 2,779 feet in Texas & Pacific railroad company No. 10 and got a 500-barrel well; the Continental Asphalt and Petroleum Company, in Robinson B-12 in 32-13-10, at 2,812 feet got a 100-barrel well and the All American Oil Company's Nelson No. 3 in 31-13-10 at 2,825 feet made 100 barrels initial.

In De Soto parish (Bull Bayou) the Ardis No. 4 of Pritchard et al in 1-12-11 came in at 2,812 feet, 75 barrels, and the Pugh 31 of the Fortuna Oil Company in 12-12-11 at 2,790 feet came in with initial production of 40 barrels.

The Colossus Oil Company's Nelson No. 1 in 31-13-10, Bull Bayou (Red River parish) was junked and abandoned at 2,850 feet, and in the same parish the Sinclair Oil Company's Polley No. 9 in 18-12-10 at 3,015 feet was junked and abandoned.

Stephens County Half Way To Ranger Peak; Leads Black Lime Area

By Paul Wagner

HOUSTON, July 24

A REVIEW down to July 1, 1920, showing the completion of 2,624 tests in black lime producing area of central north Texas, commonly known as General Ranger territory, develops that Stephens county, at the north end of the geographical expanse referred to, is producing 56,604 barrels daily of the total 95,075 barrels of crude oil being taken out.

When the first well came in at Ranger, in the latter part of October, 1917, Eastland county took the lead for development, for two reasons; the Texas Pacific Coal & Oil Company's McClesky "discovery," was in this territory, and Stephens county was necessarily slow to be developed because of overland transportation, the first railroad into this county, which adjoins Eastland on the north, having been completed into the town of Breckenridge only within the last few weeks.

Even the Desdemona district, less than 20 miles southeast of the town of Ranger, and cornering into Eastland, Erath and Comanche counties, underwent more rapid development than the pools in Stephens county, despite that it also required overland transportation. But the Desdemona district was highly flush and spotted in its development, as the history of the field showed, and the promoters made a great deal of capital out of the flush wells around the Desdemona townsite, which under intensive drilling suffered saltwater encroachment.

Meanwhile, the Breckenridge and Caddo pools of Stephens county were being slowly developed, operations slowly bringing them closer and closer together. Early in the present year, the Gunsight territory, north of the Ranger pool proper (Eastland county), but across on the Stephens county side came into being with flush wells which were sometimes phenomenal but which under usual depletion in this part of the black lime country require to pay out on the operating and lease investment that they shall have been good enough at the start and hold up well enough in the beginning to pay back the investment in the first 30 to 45 days, else there is little probability of profit-taking in the development; later, operations drew closer and closer to the townsite of Breckenridge from the earlier Breckenridge, or Parks pool, about two miles south; and additional wells north of Breckenridge indicate the possibility of still other completions in the territory around the Sapulpa Refining Company—Roxana Petroleum Company partnership well on the Ball and other producers closer to the town of Breckenridge.

Northeast from the Ball well, a still greater distance than the Sapulpa-Roxana partnership is removed from the Breckenridge townsite, the territory first marked by the Prairie Oil & Gas Company's Lyden is getting a play and occasional completions for several hundred barrels, initial production, are being brought in. The investment in Stephens county, which with some of the principal operators dates back to a time prior even to the "discovery" well at Ranger, has been long since made. Texas Company and the Gulf Production Company, the two principal Stephens county operators, obtained their acreage when it was gettable in many instances as low as 25 cents and 50 cents an acre.

With the coming in of Ranger, operators seeking leases in the black lime country at prices sufficiently low to class as cheap acreage and close enough to come in for the possibilities of the play that was to begin for production in the Bend series geological formation, did not overlook Stephens county; so that to some extent, other cheap acreage was obtained by some of the larger interests scattered about over Stephens.

How Stephens County Behaves

The history of the black lime producing area as a whole is in many respects the history of Stephens county; its black lime producing horizons show rapid depletion, except that the formation is somewhat harder in this territory and isolated "reservoirs" sometimes yield such wells as the Gulf Production Company's No. 2 K. Stoker, rated good for 12,000 barrels daily at its maximum, and the Mid-Kansas Oil & Gas Company's Carey, a similar sized well, that came in about a year and a half ago.

Shooting of wells in Stephens county frequently improves greatly the flush production therefrom, whereas in the Ranger pool proper which gained its peak a year ago and then began to rapidly decline, the utilization of shots did not have the same effect. For the most part, wells in Stephens county produce from a different stratum than in the Ranger pool proper of Eastland county, altho in both areas the oil comes from the Bend series formation. Ranger gets its first pay in the top of the black lime and its second pay in the bottom of an underlying gray lime, the latter being the more consistent horizon of the two.

In Stephens county, the so-called Breckenridge lime is the principal pay level and the existence of commercial production at lower levels in the equivalent of the Ranger producing horizons is a question, with odds against any considerable amount of it, as shown by test drilling. In the Ranger territory, the only considerable production to come from the Breckenridge lime horizon has been in the Pleasant Grove district at the west end of the Ranger pool and this was highly flush, rapidly depleting and giving no promise for the future.

Production around Gunsight, in Stephens county, more nearly corresponds to that in the Pleasant Grove district of the Ranger pool proper than with any other producing area, and properly the Pleasant Grove district were it not for its geographical location and the virtual impossibility of separating it from Ranger pool proper because of overlapping operations might be more properly classified as having its closest relation to Stephens county production.

When Ranger reached its peak around 100,000 barrels daily, more than a year ago, the black lime country as a whole (including Stephens county and the Desdemona district) reached its maximum of about 160,000 barrels daily. At that time, little more than a third the number of wells had been drilled that are now producing. And Stephens county, altho now at its maximum, has been brought to a point a little in excess of half that at which Ranger reached its peak, largely thru the flush production at Gunsight and around the Breckenridge townsite, the number of its wells being even now more than two-thirds the total that were drilled in the Ranger pool proper.

Lime Operations Summarized

Here is how operations in the black lime country show up:

	Stephens	Ranger	Desdemona	Total
Producing wells...	645	882	535	2,062
Gas wells.....	26	30	40	96
Dry holes.....	117	130	*176	466
June daily average production in barrels.....56.604		25.661	12.810	95.075
Daily per well, average in barrels.	87	30	24	**47

*Total dry holes include 43 abandoned producers, which makes total Desdemona dry holes 219 as compared with 176 original failures.

**Per well average general black lime territory.

In the Sipe Springs territory, along the Eastland-Comanche county line, but some fifteen miles southwest of the Desdemona district, the production daily of 1,078 barrels of oil in June, from 143 wells, or a per well average of seven barrels a day, came from a shallow sand horizon, except for two or three unsatisfactory deep wells, and this output for obvious reasons is not included in the review of results from the black lime territory as a whole. It may be added, however, in passing that 110 failures are recorded in the Sipe Springs district, a considerable number of which were put down to the deep, black lime level.

Desdemona Divided By Counties

Consideration of the Desdemona district is made doubly interesting to operators thru the splitting up of the tabulation of results into sections represented by the three counties, the corners of which meet inside the limits of production. The original Duke-Knowles pool, at the south end of the Desdemona district, was brought in about two years ago in Comanche county, afterwards development was extended north across the Eastland county line, and again westward across the line; in the meantime, a small amount of production had been obtained to the eastward in Erath county. It is interesting to note that at the present time nearly all the Desdemona district production is on the Eastland county side of the line, north and west of the Desdemona townsite.

Here is how the Desdemona district results divide by counties:

	Eastland	Erath	Comanche
Producing wells	409	76	50
Abandoned producers	409	76	50
Gas wells	24	11	5
Dry holes	114	28	32
Daily average, June production in barrels	11,289	1,260	261
Daily per well average, in barrels	28	16	5

It will be seen, thus, that taking a total of the Desdemona production on the Eastland county side of the line and lumping it with production from the Ranger pool proper (northern Eastland county) that this geographical unit averaged in June production 36,950 barrels of the black lime country production; Stephens county had to its credit 56,604 barrels; Comanche county 261 barrels, and Erath county 1,260 barrels.

Miscellaneous companies produce roughly a third of the 25,661 barrels daily given up by the wells in the Ranger pool proper; while in Stephens county roughly 50 per cent for the time being belongs in miscellaneous classification. Appended is shown how the production of principal operators divides in the general black lime production area, this being a territory in which major interests have necessarily been the leading factors, large investments, high operating costs, etc., excluding to a large extent the smaller operator in the early history of the development, tho the general unsatisfactory results obtained, rapid depletion of wells, etc., long ago caused the major operators to hold back their operations so as to place them on as conservative basis as it was possible for them to do that late in the experience. It may be added here, also, that slightly more satisfactory development has resulted in Stephens county, largely because of transportation conditions, which prevented its being so rapidly developed, this in effect serving as a protection against more intensive operations than conditions in the black lime country warrant.

Here is how principal operators showed up in June in the three divisions:

Production of Black Lime Districts in June

	Stephens County		Ranger Pool Proper		Desdemona District		Total Black Lime Area	
	Number Wells	June Daily Avg. Prod.	Number Wells	June Daily Avg. Prod.	Number Wells	June Daily Avg. Prod.	Number Wells	June Daily Avg. Prod.
Gulf Production Co.	71	8,331	41	713	15	295	127	9,339
Humble Oil & Refining Co.	16	934	39	2,370	....	....	55	3,304
Magnolia Petroleum Co.	21	3,490	75	686	75	4,069	171	8,245
Mid-Kansas O. & G. Co.	44	1,745	18	172	17	621	79	2,538
Prairie Oil & Gas Co.	13	724	119	3,889	6	56	138	4,669
Sinclair Oil & Gas Co.	43	830	31	1,898	22	630	96	3,358
States Oil Corporation	....	....	46	2,640	....	....	46	2,640
The Sun Company	42	2,454	28	292	15	367	85	3,113
The Texas Company	94	8,081	62	1,902	13	204	169	10,187
Texas Pacific C. & O. Co.	72	1,776	146	2,748	....	....	218	4,524
Miscellaneous	229	28,239	277	8,351	372	6,568	878	43,158
	645	56,604	882	25,661	535	12,810	2,062	95,075

Salt Water At Panuco; Two Mexican "Gushers"

Staff Special

HOUSTON, July 23.—Two "gusher" completions in Mexico rank in interest with reports of the encroachment of salt water on the No. 2 Barragan well of the Tampascos Oil Company in the Panuco field, which after showing some salt water has been closed down. The Barragan well was completed a year ago, estimated good for 50,000 barrels daily, but was closed in until three or four months ago, since which time it has been producing regularly.

Mexican Gulf Oil Company's No. 3 Amatlan, on lot 251, a recent completion in Mexico, is one of the shallowest completions in the Los Naranjos territory. It came in estimated good for 50,000 to 75,000 barrels daily, at 1,938 feet, the pressure blowing the tools out of the hole. Union Oil Company's well on lot 114, Chinampa, also a completion of last week, is rated at 85,000 to 100,000 barrels daily at a depth of 2,082 feet.

Union Oil Company's well is located between the Chinampa "gushers" of the Transcontinental Petroleum Company (Standard of New Jersey) on lot 97, and the Cia. Metropolitana de Oleoductos, S. A., the latter affiliated with the Island Oil & Transport Company, on lot 135, each of which was rated good for 75,000 barrels, or better, when recently completed. A well of the Texas Company of Mexico, S. A., brought in on the same lot was recently rated good for as high as 100,000 barrels daily.

Principal work in the fields of Mexico continues to center in the Chinampa and Los Naranjos-Zacamixtle territory, where further recovery is being experienced from flood conditions that a month ago hampered overland transportation, and which for a time virtually brought about cessation of activities.

Plans for taking care of greater work in Mexico are indicated, however, by the programs of the Oil Well Supply Company of Mexico, S. A., and the Tampico Foundry, Machine & Supply Company, both of which are establishing additional facilities in the way of frontage and warehouses at Tampico. Oil Well Supply Company has arranged for purchase of lots "O" and "P" on Isleta island, according to Tampico advices, and the Tampico Foundry, Machine & Supply Company shops also are to be moved to Isleta island, in the Panuco river.

Passenger traffic between Tampico and the States has been curtailed because of the fact that Tampico is quarantined against American ports on account of the bubonic plague situation, a few cases having developed at Galveston and Beaumont, Texas.

Majority Of Wells Have Gas Showings

By Special Correspondent

PITTSBURGH, July 26.—Completions during the trade week were of a routine character, no large producers appearing. It was noticed that more than the usual number of wells brought in showed gas rather than oil, and if the pressure were large a situation of this nature would not be displeasing just at this time. The largest gas well of the week was a 7,000,000 cubic foot gasser which the Guffey Gillespie Oil Co. got on the Brown tract on Jordan's creek, Big Sandy district, Kanawha county. The acreage was involved in court litigation, following the discovery of a half dozen large oil producers last year, but the court decided that Guffey-Gillespie interests had full privileges to operate if they paid the allotted royalty.

Another completion of the Guffey-Gillespie people in this territory is a 20-barrel well on the Goshorn tract in Big Sandy district. The well is 70 feet northwest of No. 1, the only other completion in that immediate locality. McKinney & Scarff's No. 3 on the Cobb farm is a fair gasser in the Weir sand. On Doctor's creek, the South Penn Oil Company has a good gasser in the Big Injun sand. The well is on the Samples farm. It was dry in the Weir sand. Koontz & Osborne got an 8-barrel well on Elk river, Big Sandy district.

Some interesting work is under way in Sheridan district, Calhoun county, where M. F. C. Crowley last week got a 4,000,000 cubic foot gasser at a salt sand test on the Cooper farm. The South Penn Oil Company has three wells being drilled in that field.

Leading the week's completions in volume of production is a 100-barrel well which the Continental Oil & Gas Company got at their third completion on the B. F. Weaver farm on Little Laurel run of Tanner's creek, DeKalb district, Gilmer county. The pay was reached in the Maxon sand; the flow was raised to 70 and then to 100 barrels when it was shot.

Much interest was shown in the Hope Natural Gas Company's strike at the 1,200-foot level at what was intended to be a deep test on the Volcanic tract in Walker district, Wood county. The oil will be cased off and drilling resumed to deeper sands.

Ohio completions were not beyond the routine. One exception was the J. M. Scott Oil Company's No. 7 in Sec. 27, North township, Harrison county, which is doing 30 barrels daily from the Berea grit. A D. Simon got a 5-barrel well in Wesley township, Washington county. The Pure Oil Company's No. 11 in Sect. 18, Pike township, Coshocton county, was shot, and is doing 3 barrels in the Clinton sand. The Pomerick Oil Company has a 5-barrel pumper in Graysville district, Monroe county. Archer & Berry struck a good gasser in Lawrence township, Washington county.

West Columbia Leads Coastal Interest; North Texas Operations Dull

Staff Special
HOUSTON, July 24

GULF Coastal development took precedence in the week under review over operations in either the sand country or the black lime producing areas of north Texas, neither of the latter named divisions developing anything of more than ordinary consequence.

The West Columbia pool, heretofore confined to an area less than 100 acres in scope, was the scene of the important developments that resulted in the Gulf Coastal territory. Here the Texas Company brought in a flush well, roughly three-quarters of a mile northwest of previous production, which was rated as good for 20,000 barrels daily of 20 to 22 gravity oil at a depth of about 2,750 feet. This well, which at the end of the week had not shown any water in the flow, is No. 1 Abrams and is surrounded on all sides by Texas Company acreage, almost solidly blocked.

On the east edge of old development in the West Columbia pool, Humble Oil & Refining Company's No. 26 Japhet, which came in for about 8,000 barrels, initial production, at 3,310 feet, increased its flow to 10,000 barrels daily. The Texas Company and Humble wells, therefore, nearly triple for the moment the West Columbia production, which last week averaged roughly 13,850 barrels daily.

Immediately east of the Humble well, roughly 800 feet away, Gulf Production Company has two wells on the Hogg "B" lease showing, No. 1 at 3,435 feet and No. 2, which encountered hard sand at 3,217 feet. Routine West Columbia completions are the Gulf's No. 6 Eyers, which developed salt water at 3,090 feet; Humble Oil & Refining Company's No. 6 Bashara, dry at 3,312 feet, and the Southern Petroleum Company's No. 2 Roberts, a 300-barrel pumper at 3,405 feet.

Abrams Opens New Territory

The Texas Company's Abrams, classified as a "wildcat" either extends the pool as it had been previously known three-quarters of a mile northwest, or it opens up a separate development elsewhere on the West Columbia dome. The farthest northwest test previously drilled in this direction from the old development, and between the known pool and the Abrams well, was No. 23 Hogg of the Texas Company, which encountered salt, the bane of Gulf Coastal operators, at 1,275 feet. No. 1 Chance of the Humble, also on a direct line to the Abrams, but closer in to the old development, had the salt at 3,200 feet. Almost due west of the old development and southwest of the Abrams, roughly three-quarters of a mile in either direction, heaving shale has been a problem in test drilling, altho showings of oil have been obtained in a number of operations.

Here is a record of West Columbia production, by companies, and wells, other than the two present sensational completions: Crown Oil & Refining Company (White Oil Corporation):

Well—Number	Net Prod. Bbls.	Condition
Alchosky 1	100	Pumping
Alchosky 2	150	Flowing on air
Alchosky 3	150	Flowing on air
Marmion 2	50	Pumping
Marmion 3	50	Pumping
Marmion 4	...	Off
Gulf Production Co.		
McMeans 1	100	Pumping
McMeans 2	200	Pumping
McMeans 3	1400	Flowing on air
Eyers 1	15	Pumping
Eyers 2	75	Pumping
Eyers 3	100	Pumping
Eyers 4	50	Pumping
Eyers 7	125	Pumping
Weems 1	5	Pumping
Prell 1	25	Pumping
Hogg A-3	100	Pumping
Hogg A-5	...	Off
Hogg A-7	250	Flowing on air
Masterson 1	10	Pumping
Underwood 1	...	Off
Humble Oil & Refining Co.		
Japhet 3	25	Pumping
Japhet 5	400	Flowing on air
Japhet 7	125	Pumping
Japhet 8	150	Pumping
Japhet 9	...	Off
Japhet 11	400	Flowing on air
Japhet 12	500	Flowing on air
Japhet 13	250	Flowing on air
Japhet 15	500	Flowing on air
Japhet 17	75	Pumping
Japhet 18	600	Flowing on air
Japhet 19	350	Pumping
Japhet 20	25	Pumping
Japhet 21	350	Pumping
Japhet 22	250	Pumping
Japhet 23	500	Flowing on air
Japhet 24	100	Pumping
Japhet 25	100	Pumping
Giraud 4	250	Flowing on air
Giraud 5	250	Flowing on air
Giraud 6	75	Pumping
Coon 3	40	Pumping
Coon 4	400	Flowing on air
Coon 5	...	Off
Bashara 3	...	Off
Bashara 4	125	Pumping
Waters 1	25	Pumping
Marmion 1	200	Pumping
Marmion 2	...	Off
Marmion 3	100	Pumping
Sun Company		
Robertson 1	100	Pumping
Robertson 2	...	Off
Robertson 3	175	Pumping
Robertson 4	50	Pumping
Robertson 5	...	Off
The Texas Company		
Arnold 2	200	Pumping
Arnold 5	...	Off
Arnold 9	100	Pumping
Arnold 13	10	Pumping
Arnold 18	15	Pumping
Arnold 19	600	Pumping
Hogg 10	10	Pumping
Hogg 11	10	Pumping
Hogg 12	150	Flowing on air
Hogg 13	200	Pumping
Hogg 15	325	Pumping
Hogg 16	275	Pumping
Hogg 17	150	Pumping
Hogg 19	...	Off
Hogg 25	25	Pumping
Hogg 27	350	Pumping
Hogg 28	275	Pumping
Hogg 31	50	Pumping
Hogg 33	200	Pumping
Hogg 34	40	Pumping
Hogg 37	1080	Flowing on air
Hogg 38	200	Pumping
Hogg 39	150	Pumping

Gross Figures Include Water

Net production figures only are shown in the foregoing, the gross production also including the amount of water or b. s. showing in the wells in their flush or partially flush state. Wells on a pumping basis do not show either water or b. s. under ordinary circumstances. Two of the Alchosky wells of the Crown, each rated with gross production of 1,000 barrels, are making in each case 85 per cent of b. s., leaving in both cases 150 barrels net production. Hogg A-7 of the Gulf, making 1,000 barrels gross, is showing 75 per cent bad; Humble's Japhet No. 5, producing 1,000 barrels, is 60 per cent bad; Nos. 11, 12, 13 and 15, making 1,000 barrels each gross, are showing bad, respectively, 60, 50, 75 and 50 per cent; No. 18, with 1,200 barrels gross, is 50 per cent bad, the same percentage applying to No. 23 with 1,000 barrels gross flow; Nos. 4 and 5 Giraud, flowing 1,000 barrels, each are 75 per cent bad. The Texas Company's No. 12 Hogg, gross production 1,000 barrels, is 85 per cent bad, and No. 37 Hogg, making 1,800 barrels gross, is 40 per cent bad.

At Humble, in Gulf Coastal classification, the Texas Company's No. 31 Kohler is a 3,500-barrel completion in an old territory, and on a previously proven tract; at Hull, the Republic Production Company's No. 33 Dolbear is making about 1,200 barrels daily at 3,010 feet, of 16 gravity oil, four per cent water, after cleaning itself out; in Fort Bend county the No. 2 Luscher test of the West Production Company is a 10-barrel pumper at 2,696 feet.

Stribling et al brought in a 300-barrel well in the Riverside sub-division, at Humble, good for about 300 barrels, about 400 feet southwest of the farthest Texas Company "outpost" in this direction, along the San Jacinto river.

Black Lime Producing Area

In the black lime producing area of central north Texas, the most significant current developments have to do with the failure of deep tests below the Breckenridge lime horizon to result in satisfactory production, this condition indicating still again the improbability of the Ranger levels being commercially productive in Stephens county.

Humble Oil & Refining Company's No. 1 E. J. McClesky, in the Caddo district of Stephens county, was shot with 90 quarts at 3,660-3,750 feet after drilling to total depth of 3,875 feet, being dry and abandoned; Sun Company's A-7 Rosenquest, shot with 330 quarts at 4,132-4,180 feet, after drilling to total depth of 4,260 feet, is being prepared to pump; Union Oil Company's No. 1 Whitenburg is fishing in sand at 4,232-4,248 feet.

In the Breckenridge district of Stephens county, the Humble's Glenn test is being mudded to abandon after a 90 quart shot at 3,275-3,300 feet, after drilling to total depth of 3,746 feet, and the Gulf Production Company's No. 3 K. Stoker, on the same tract where this company brought in No. 2 about three months ago for a maximum of approximately 12,000 barrels daily, will make a pumper after a shot at 3,210-3,229 feet.

Northwest of the second well of Foster, Phillips et al, on the Hilborn, southwestern Eastland county, which came in for 100 barrels an hour about ten days ago, the Consolidated Oil Company of Texas well on the Vestal tract is now pumping 15 barrels of oil and 90 barrels of water daily from a

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depth of 3,763 feet. The well came in about the first of the year, across the line in Callahan county, and it, with the original Hilborn, was considered a "pointer" for other possible development.

Sand Country Operations Dull

In the Wichita Falls (sand country) district south of Red river, which constitutes the Oklahoma-Texas state boundary, only ordinary wells were completed in the period under review. None of these were of special significance in either the Burkburnett territory, the Texhoma shallow pool or the Kemp-Munger-Allen area.

North of the old Electra field, in the west end of Wichita county, the Cauble Oil Company test, No. 1 Burnett, reported at various times to have had showings at shallower levels, was abandoned at 2,248 feet.

Baton Rouge Strikers Violate Approved Plan

Staff Special

HOUSTON, July 25.—Approximately 300 boilermakers on strike at the Standard Oil Company of Louisiana refinery at Baton Rouge represent roughly 11 per cent of the number of men employed at the plant. Their failure or refusal to abide by terms of the Standard's industrial representation plan, in effect since November, 1919, is blamed for the walkout in a statement given out by President D. R. Weller, of the Standard company.

The strike became effective July 21, when two members of the boiler makers' union notified the management the men would quit in a half hour's time.

President Weller's statement refers to submission May 8th last, by the boiler makers of a new contract schedule which was refused by the company with the statement that the plant was being operated under the industrial representation plan, patterned after the Congress of the United States, and that any matter requiring adjustment should be handled thru the employes representatives. President Weller cites that when the industrial representation plan was submitted last November 98 per cent of the men participated in the elections, thus signifying their approval.

Since leaders of the boiler makers' union are quoted by President Weller as admitting that no grievance of any kind had been submitted to officials of the company, which had not received proper adjustment under the industrial representation plan, the management takes the position "therefore, the issue is purely one of yielding to a straight out union contract (closed shop) on the one hand, or the continuance of the industrial representation plan on the other."

President Weller then says the "company very properly takes the position that the responsibility of the management on the one hand, and the authority of management on the other, cannot be divorced, and further insists upon dealing only with its own employes either directly thru committees of their fellow employes which have been heretofore voluntarily selected in accordance with the company's industrial representation plan which most fairly and fully carries into effect the principle of just and collective bargaining."

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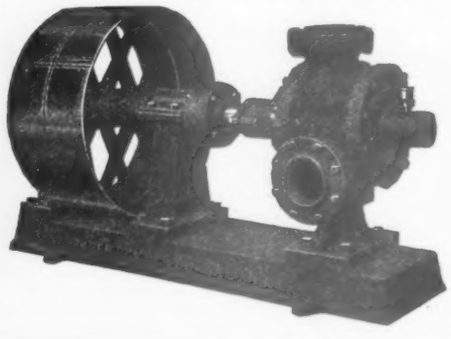

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Good Producers Mark West Kentucky Work

By Special Correspondent

LEXINGTON, KY., July 26.—Western Kentucky ,as usual, comes to the front with more big wells than any other section of the state during the past week, but much activity is reported from practically every county in the state which produces oil.

The biggest well in Kentucky in several weeks is reported from Simpson county. The Tide Water Oil Company brought in a well on the Henry Reeder lease, near Franklin, in the Stringer pool, which began flowing after the drill had penetrated two feet into the sand. Its output is estimated at 1,000 barrels daily initial.

Ely Bailey reports No. 3, Cooper lease, Allen county, in at 310 feet and good for 250 barrels.

Overall & Parker completed No. 2, Bourbon Stamps lease, Allen county, at 436 feet, 5 under shale, and rated at 100 barrels. There were three oil sands, one 6 feet thick, one 12 feet and the third 20 feet. The well filled up 320 feet with oil.

Tom Wright reports No. 2, Willoughby lease, Warren county, in at 546 feet, and 15 feet of pay. There was considerable gas and a good showing of oil.

The Leon Oil Company reports a good showing on the Ora S. Davenport lease of 25 acres, Warren county, at 625 feet.

The Harrisburgh Oil & Gas Company reports a good well on the Sam Belcher lease, Warren county, at 1,040 feet, north of the Davenport wells. The capacity has not been determined.

Since pipe line service has been extended to the Magoffin — Johnson county pool and oil is being run from nine leases, the effect has been to stimulate production. Machinery and supplies are being rushed to the field. Fifty machines and rigs are now drilling that many wells in that pool, and the roads from Paintsville to Oil Springs are almost blocked with the shipments. The sand there is found at around 1,000 feet and about 275 feet below the base of the Big Lime. Sixteen wells in that section are now producing from 10 to 60 barrels daily each.

Browning Petroleum Company's No. 2, L. C. Bailey lease, is reported to be a good producer, but the capacity is not given in reports reaching here so far. This company is bringing five machines to the lease and expects to develop it rapidly.

Jewell & Brown have another good payer on the Warrick Bailey lease, and are pushing the drilling with three rigs. It has excellent holdings in the Johnson county field.

The Bed Rock Oil Company has made a location on the Charles Wheeler lease Litteral Fork, Magoffin county, and will start drilling there at once. This company is pumping Nos. 1 and 2, Milt Wheeler, Magoffin county, and Nos. 1 and 3, R. M. Griffith lease.

L. C. Patterson is pumping his Tom's creek, Magoffin county, well, in the Berea sand, and it is producing five barrels.

Barney Calvert, of Benedict & Hutchins, drilling in Simpson county, reports No. 1, Henry Reeder lease, drilled in at 585 feet after penetrating the cap rock

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only four feet. The owners say this well is worth 100 to 200 barrels.

The Union Oil & Gas Company, which is prosecuting an active campaign on its holdings in Lawrence county, now has eight rigs in operation there and will put eight more to work soon. This company has contracted with the National Drilling Company to move three outfits from Busseyville to Louisia fields to the Upper Blaine field, where the Union has several good pumpers.

The L. C. Patterson Oil Company has a 10-barrel pumper on its Johnson county lease.

Leighty Bros. have a 25-barreler on the Clint Rigsby lease, Warren county. It was brought in at 450 feet in a 20-foot pay sand.

The Midland Oil Company, No. 1, Potter lease, Warren county, is making 25 barrels.

The Wood Oil Company has two wells in Wayne county, making 5 and 10 barrels, respectively.

Stein well No. 2, southeastern 50 acres of the Tarrants lease, Warren county, is reported at 50 barrels.

Tupper and others, No. 2, Foster lease, Allen county, have a new well which is declared better than No. 1, which has a 30-barreler.

The Barren River Oil & Development Company shot a well on the Bush lease, Warren county, and from indications it will be a good producer, as the hole has filled with oil. Its capacity has not been determined.

No. 2, Lee Bailey well, Magoffin county, is estimated at 100 barrels.

Well No. 1, Sanford Lyon lease, Upper Blaine field, Lawrence county, produced 151 barrels of oil in 26 hours. Well No. 2 is drilling.

The first well on the James Gambill, Lawrence county, is making 75 barrels.

Shaw & Balmer have a 25-barrel flowing well at No. 3, Ora Davenport lease, Warren county.

Within 2,000 feet of where the first oil well in Warren county was brought in several years ago by the Chenault Oil Company, one of the best deep wells in the county has just been shot. The sand was penetrated at 1,164 feet and finished at 1,216 feet. Oil was thrown 200 feet in the air by the shot. The bailer was put to work, and altho it worked from 2 to 4 o'clock, the oil rose 175 feet against the bailer. The well is on the John Jackson lease which has three wells.

HOUSTON, July 26.—Fire at Desdemona, on the Eastland-Comanche county line, and scene of boom development a year ago around the townsite damaged the business district to the extent of approximately a half million dollars July 24. At Vernon, Wilbarger county, the nearest town to the Sigler development west of Electra, fire gutted practically a town block after originating in a pressing shop.

LEXINGTON, KY., July 26.—David Browning, president of the Eastern Kentucky Oil Men's Association, called a meeting of the association at Paintsville Saturday. The meeting was to invite attention to that section of the oil well supply companies and take steps toward obtaining a shop for the repair of oil well machinery. Co-operation toward developing the Big Sandy oil field was also discussed.

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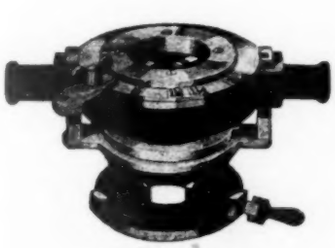

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Hundred Rigs Up In Wyoming Osage Pool

By H. L. Wood

NEWCASTLE, WYO., July 26. — After a trip over the Osage field in Weston county, northeastern Wyoming, it can be stated in a nutshell that the field may be called 25-barrel territory, with some wells making more and some less. The outlined area is about five miles north and south and two miles east and west, the surface levels and outcrops indicating that it may not widen out much east and west and not much further south, at least not in that immediate pool area.

Producers and Refiners Corporation well in Sec. 25-46-64 is the southernmost well now. It is 1,580 feet deep with 25 feet of formation and may be called a 50-barrel well. Its depth indicates that the sand is dipping to the southwest from 1,150 feet in Sec. 11-46-64 to the north where the Quinn Pool Oil Company has a 40-barrel well. In Sec. 17-46-63, just southwest of the town of Osage, a number of wells about 900 feet deep will pump about five barrels each. There is no pipe line connection as yet.

From Thornton, northwest of Osage, Weston county, to the south end of the Osage pool, approximately 100 drilling rigs are on the ground, 25 of them standard derricks and most of them working, with others coming in all the while. To date, excepting the shallow wells just outside of the town of Osage, only eight wells have been completed, the first one the middle of last March by the Gold Medal Oil and Gas Company, part of the acreage of which and two completed wells were purchased by Sinclair Oil and Gas Company. This discovery well flowed and pumped 150 barrels as needed for drilling wells, six metal tanks of 250 barrels each being up and at times full. The depth of the well is 1,350 feet.

The Osage crude, carrying a large percentage of lubricant, is light green in color and shows gravity ranging from 43 to 47 degrees Be., a fine crude. Newcastle, the county seat of Weston county, is working headquarters for the Osage-Thornton-Moorcroft field. All supplies have to be shipped from Casper, 300 miles, by the Burlington railroad, changing at Crawford, Neb., if shipped by the Northwestern railroad, or at Alliance, Neb., if by straight Burlington routing. Pipe and other equipment is shipped in considerable quantities from Casper by truck, the haul being about two days. Some of the roads are fairly good and some fairly bad.

Operators in Weston county so far are largely individuals and small local companies, but the Ohio Oil Company, the Western States Land and Oil Company (Midwest Refining Company), The Sinclair Oil & Gas Company, and the Carter Oil Company are getting in.

The board of directors of Biery Oil Company, Frankling, Pa., marketers of petroleum products, have declared a quarterly dividend of 2½ per cent each on the preferred and common shares of the company, payable August 1 to stockholders of record July 19.

Kentucky As An Oil Producing State Is Not A False Alarm

By H. L. Wood

BOWLING GREEN, KY., July 15

REVIEWING Kentucky as an oil-producing state, after a fairly comprehensive driving tour, the conclusion is inevitably reached that it is real oil territory, that has been neglected a long time because gusher fields of the west and south attracted operators and capital. When it is considered that from 1883 until 1903 Kentucky's oil production ranged annually from 4,500 barrels to 500,000 barrels, from three or four counties where a pipe line had been laid, with 1905 and 1906 the banner periods up to 1915, it is easily understood that only real oil territory could, in three years, swell yearly production to 9,500,000 barrels and become the leading state east of the Mississippi river.

Operators from Pennsylvania, West Virginia and Ohio, who prospected Kentucky, naturally worked along the lines of previous experience—as they did in Kansas, Oklahoma and other western fields—and that experience at times did not cover some of the conditions found in Kentucky. And, in some respects, the fundamental relationship of formations, deposition of oil and methods of location cause some failures now. Perhaps (with apologies to the professional brethren) a brief outline of fundamental geology, as applied to oil, may either be instructive or interesting and brush away some of the cobwebs of complexity and conjecture, that quite often cover up more oil than they uncover.

Sedimentary Marine Formations

If we visualize Kentucky and Tennessee as having at one time formed the bed of the Atlantic ocean and the Gulf of Mexico, like West Virginia, Pennsylvania, Ohio, Indiana and Illinois, and follow as best we can by careful study Nature's uniform working, we may, in a measure, start at the bedrock and work upward to a reasonable conclusion that will help considerably in locating and recovering the oil that found placement within the boundaries of Kentucky. It must be understood at the outset that the surrounding structure, origin of petroleum oil and the deposition of sand and gradual admixture of formations are so much older than human investigation, research and historical records that only conjecture can be the final result. The recording of investigation, we know, is clouded by the many idiosyncrasies of individuals and the countless theories that have been added to the original guesses. At this writing, with primary geology only four hundred years old, thousands of amateur and professional practitioners of geology are floundering in more conjecture and conglomerate theory than ever before. To say the least it is all very confusing to the person who is just taking up the discovery and production of crude petroleum and to the operator who, after half a century of experience, wants to adopt modern methods and feel that he is at least keeping in sight of the procession.

If we can agree that the territory under discussion was the bed of the ocean, we can agree that as to most of that floor area sediment carried by water, wherever there was little or no current and movement of the overlying fluid, must have settled on the floor with so little disturbance that it remained as and where it settled. Wherever this precedent condition is found the resulting formations are so nearly identical as to leave little room for doubt or differences of opinion after unbiased investigation. Sedimentary deposits thru the filter of salt water that is comparatively still are universally so closely and impalpably held and merged that little crystallization and grain is possible, the stratum and strata being of almost invisible fineness of texture. This condition is quite noticeable wherever the Trenton rock or lime is found, either productive or non-productive, and in most other areas where formations are laid along ocean floors by sedimentation. Those portions of Ohio, Indiana and Illinois where the Trenton rock exists, and especially Kentucky and parts of Tennessee, are fine examples of sedimentary formations. Rocky Mountain areas where oil shales are prevalent are good examples of the same processes.

Evidences of Marine Deposition

While the research experts have not yet quite agreed that the oil shales of Colorado, Utah, Nevada, Wyoming, Montana, Idaho and California are formed from the almost impalpable sedimentation at the bottom of salt water and afterward moved upward to become the top of the Rocky Mountains, a reasonable agreement has been reached.

The average altitude above sea level in Ohio, Indiana, Illinois, West Virginia, Pennsylvania, Kentucky, Tennessee and south to the Gulf of Mexico is approximately 600 feet, the peaks of hills having been left above the valleys and lower levels by erosion of soft formations to lower levels during the period of disturbances and gradual uplifting. The admixture of eroded substance, containing more or less sand and crystallized particles, with the surrounding silt, or sediment, accounts for the sandy streaks found in sedimentary and limey formations and are natural receptacles for the oil that must have originated during the same geologic period and gradually became crusted over and sealed by the lime strata. Trenton rock is a very fine-grained formation and distinguished quite generally by the sulphur content of the water and oil it may contain in fissures and conglomerate sandy streaks. In Kentucky all the oil found in what is designated as Corniferous strata has a sulphur content. Most of the oil found along salt water shores also carries sulphur, especially in sedimentary formations. A distinguishing feature of the Corniferous strata in Kentucky, especially on the top and sides of the Cincinnati arch, is the presence of oil shales, as in Rocky Mountain areas, forming a consistent landmark pointing to identical history. Coal, of later age, is also a fairly general trademark of sedimentary formation, having perhaps some of the precedent conditions involved in petroleum oil formation, but lacking, also, some of the conditions necessary to the origination of oil, and not to be confounded in belief that oil and coal are of identical origin except as to age.

In much less intensity the uplifting force that left the Cincinnati arch in Kentucky, from the Ohio river on the north to the Cumberland river on the south, was identical with the force that left the Rocky Mountain ranges and the Cascade range along the Pacific coast and the Allegheny and the Blue Ridge ranges along the Atlantic coast. There are many identifying stratifications that lead the careful investigator to this sure conclusion. Having thus found a common plane and purpose on which to stand as we survey the handiwork of Nature, we may quite rationally ignore most of the conjectures, theories and muddled dreams offered the petroleum trade as reasons necessitating certain precedure in the search for oil deposits and methods of recovery after discovery. The first clarifying idea is to visualize the primeval hard rock structures, high or low, as antedating the formation of sand and lime strata that contain petroleum oil, their juxtaposition meaning nothing in the fundamentals of sands and their fluid contents except as mere containers or receptacles of whatever came later. This flat statement may be modified by agreeing that the granite, or pre-Cambrian, period, followed by the Cambrian period, may be accepted as the earth's main shell and impervious to fluids and below which no fluid may find lodgment except in fissures.

Coming again to Kentucky, the Corniferous strata meets and disappears under the first overlying stratum after the meeting point, the Berea Grit, and the upper strata of the Weir and Big Indian classification. These overlying strata were formed by or were built up by Atlantic ocean waters and levels, while the Corniferous strata were under the Gulf of Mexico, as near as we may identify these things, and the meeting line of the differing strata formed, apparently, the diverging line of the Atlantic and the Gulf. The force and movement of confined water are much greater along shore lines than in interior and stiller depths, leaving as

evidences the clean-washed and crystallized sands in Pennsylvania, West Virginia and southeastern Ohio as distinguished from the sedimentary deposits in Kentucky, Tennessee, western Ohio, Indiana and Illinois. This general statement may be modified to cover the cleaner sands in Illinois and parts of Indiana verging into the counteracting forces dipping from the eastern slopes of the Rocky Mountains and meeting the forces dipping west from the Alleghenies and joining in the Mississippi valley.

From the Atlantic levels west to the Ohio-Kentucky lake basin the dips are quite regular per mile, and from the Rocky Mountain levels the eastern slopes are quite regular. However, there is an intermediate force that must be recognized—the centrifugal force that leaves its effects in a general western dip of regular formations, such local variations as appear being mere detail that do not vitiate the rule Here, again, we must apply common demonstration and sense, or we would eventually find ourselves in the center of the earth, which is supposed to be hollow and filled with molten stuff. This governor is the demonstrated fact that oil is found and produced at reasonably uniform depths all over the earth, regardless of the fact that structures identified by geology dip to unknown depths below the surface and are finally lost beyond the pale of even loose conjecture. Here and there oil is found and recovered in negligible quantities at depths from 4,500 to 5,300 feet; but it is only in a few places that oil is produced from 4,000-foot levels, with the bulk of it coming from levels above 3,500 feet.

The production of oil from the lower levels ends quite abruptly and is taken up again at shallow depths that dip so far and the oil quits. This condition is so prominently in evidence that attempts to find oil in profitable —or even unprofitable—volume at extreme depths, or even below 4,500 feet, are so realistically contrary to nature as we know nature that they may safely be termed nonsensical. This line of thought brings us again to Kentucky, where the altitude level is 600 feet and the oil-producing level is quite generally above 1,200 feet, the exceptions being in a few spots where the formations carrying oil dip to 1,800 feet and oil does not appear below, for perfectly normal reasons.

Bed Rock Limitations

Between the Allegheny range on the east and the Rocky Mountain range on the west, particularly west of the Mississippi river, the bed or floor of overlying formations that produce oil is the Mississippi limestone. Where this lime is found in place there is no likelihood of finding oil below it. In Kentucky they tell us the Mississippi lime extends from the surface down to 400 or 500 feet. In this upper stratum oil is copiously produced at depths ranging from 100 down to 1,300 feet, the latter depth being reached in the southern part of Lee county, east of the arch, and a depth of 550 feet in Simpson and Logan counties, west of the arch. In Warren county, west of the arch, a producing formation is found at 1,050 to 1,300 feet, 600 feet below the Beaver, Sunnybrook or Irvine stratum, and by some called the Trenton rock, altho the limey sand, with lenses of clear sand, does not differ materially from the Irvine upper formation—it's probably all Corniferous, with a wide break between.

To the eye, and as to its producing characteristics and fluid, the formations from the surface down in which the oil is found in central and southwestern Kentucky appears to be of similar texture and characteristics to the Trenton rock wherever found productive. It seems to me that wherever the Trenton rock appears, productive or barren, it is the lowest producing formation in its indigenous territory, and attempts to find something below will result much like attempts to find oil below the Mississippi lime in Oklahoma or the Ellenberger lime in central Texas.

If we can definitely outline the limits of the Trenton rock formations, as distinguished from the Pennsylvania and Mid-Continent sands, some progress will have been made in locating territory that it is well to stay away from, or at least in arriving at some depth below which it is a waste of money and time to drill. By following this general plan millions of dollars will be saved that can be applied intelligently in the search for undiscovered oil deposits.

Kentucky Producing Area

As mentioned in a previous article, eastern Kentucky embraces twenty-seven counties in which oil in some quantity is known to be present, varying from 3 to 600 barrels per well. The southwestern limit of oil similar in grade and depth is Monroe county, on the Tennessee state line about the center of the state east and west. In the northeastern part of the state the oil is found in the Big Indian, Weir and Berea formations and at depths ranging from 900 feet in Magoffin and Johnson counties to 1,700 feet in Lawrence and Floyd counties. In Wayne, Cumberland and Monroe counties the prevailing depth is 1,500 to 1,800 feet, with the 900-foot depth found in places, and no sulphur content. Immediately north of the southern tier of counties, and round what is the southern end of the Cincinnati arch, oil is found at depths ranging from 200 to 500 feet, in Russell, Adair, Lincoln and adjoining counties. This is apparently the Corniferous strata rising from the extreme depths in Lee county on the east and Warren county on the west, Barren county, perhaps, showing the shallowest producing depth west of the arch, 180 feet.

North and northwest of Warren county all formations dip rapidly to the northwest, following the breaks of Barren and Green rivers, in which section the Mammoth and many other caves are located. There are considerable deposits of rock asphalt in that section, in Grayson county, and several test holes drilled to a depth of below 3,000 feet have found strata of good sand, with traces of gas and oil at depths. To the west of Carter county, in northeastern Kentucky, the two to six tiers of counties south of the Ohio river down to the extreme southwestern corner of the state have showed no oil, Estill and Powell counties east of the Cincinnati arch, and Warren and Allen counties, west of the arch, being the northern limits of commercial production to date.

That part of Kentucky in which the Corniferous strata are productive has so far been the most profitable, both because of their shallow depth and bigger wells, and operators are looking for the Corniferous territory, particularly in the southwestern part of the state, which is just coming into active development, and therefore offers a much wider range of activity. At the present rate of prospecting and development the best part of the Corniferous area will be occupied soon, when operations will turn toward the eastern Kentucky territory and northern Tennessee, both sections now showing considerable leasing and drilling activity.

Oil Shale Possibilities

Several companies have been organized to develop oil shale in Kentucky, one company having tentatively announced that it intended to construct a destructive distillation plant at or near Irvine at a cost of $2,500,000; there is nothing definite about the plans.

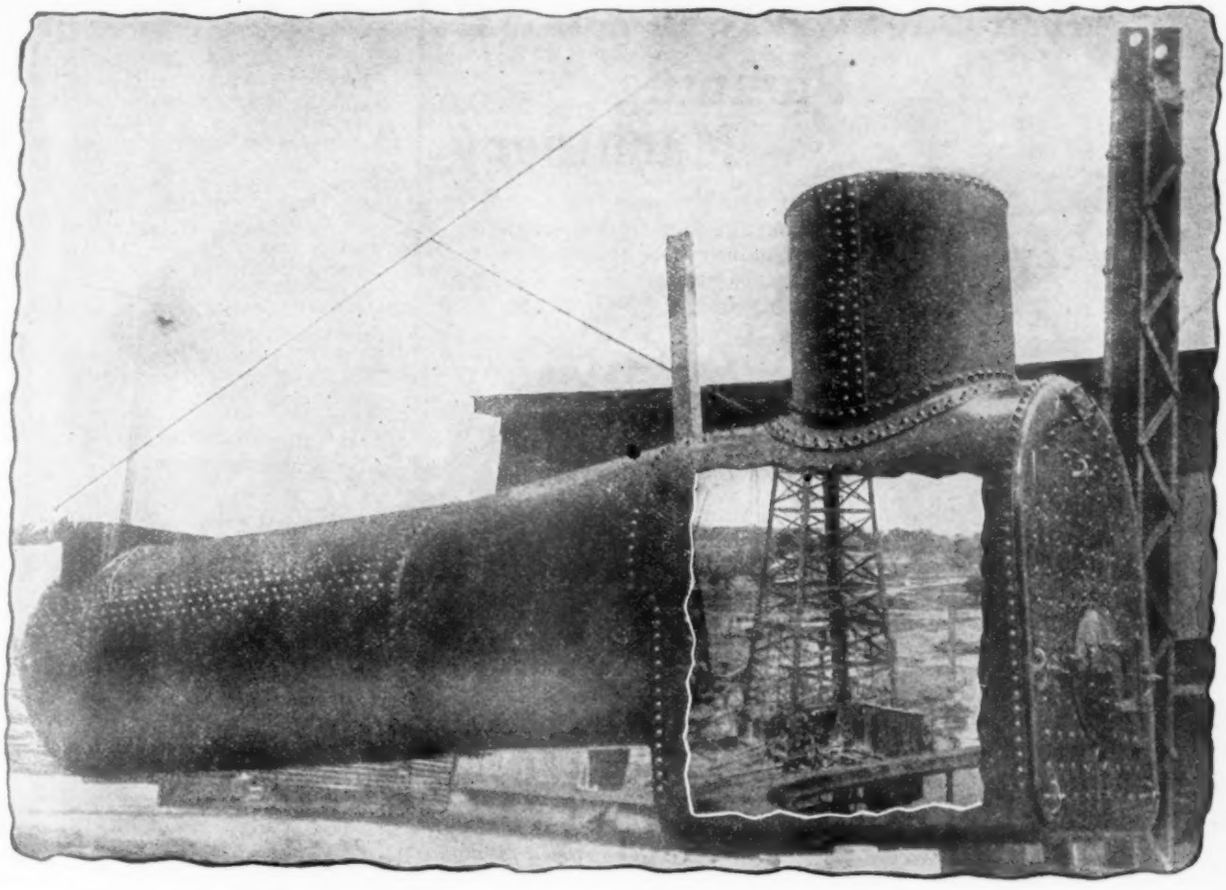
Oil shale outcrops in Estill and Powell counties on the north and is found outcropping south of the Tennessee line in Monroe and Cumberland counties, and is drilled thru in places at depths of 20 to 50 feet. This shale is identical with the shale of the Rocky Mountain district, and will show similar results when retorted, altho there is no data at hand obtained from laboratory tests.

Undeveloped Production

Of the 110 counties in Kentucky 55 are probable producing territory and 55 are probably barren of oil in profitable volume. Hardly another state has as much productive area as Kentucky, altho much of it is light-well territory. However, depth and other conditions combine to make it easier of access to individual operators of limited capital than many other states, particularly west and south, where individuals and companies of ample capital make it difficult for operators of less capital and resources to get in right. The surface of Kentucky is very broken and ordinary transportation methods are not possible, the cost of moving rigs and material being excessive compared with many oil fields. This drawback is somewhat mitigated, however, by shallow drilling, cheap acreage, low-priced drilling charges and more elbow-room for operating, in most sections. A 1,000-barrel well in Kentucky is the exception and 25-barrel wells the rule, which accounts for the absence of big operators looking for gushers regardless of depth or cost, leaving more room for the little operator.

Comparative Deductions

Beginning in 1883 Kentucky produced that year 4,755 barrels of crude oil, declined to 500 barrels in 1897, then gradually increased to 1,217,337 barrels in 1905, 1,213,548 barrels in 1906, then declined to 472,458 barrels in 1911, and gradually increased its production to 1915, when Estill county opened the rich shallow-sand belt in Estill, Powell and Lee counties. In 1919 the state's production was 9,400,000 barrels, and that rate is being maintained in 1920, with many wells standing idle because of no pipe line connections, causing



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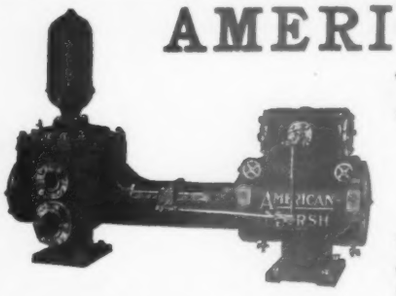

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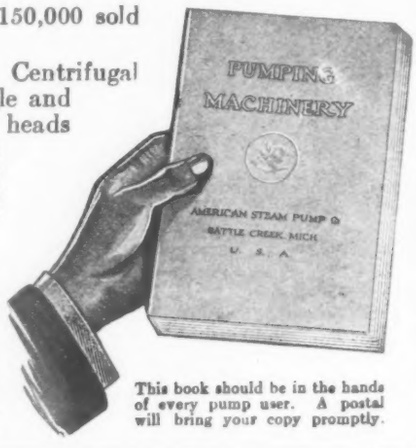

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Value of Production

Operators and buyers not familiar with Kentucky seem to believe that Kentucky wells go to pieces after a few months and are thus skeptical about the value of producing properties. Prior to five years ago Kentucky production was so scattered and so few people knew much if anything about it that the common belief appears to be that it isn't worth while, that production will not pay out. It is quite generally true that wells in Estill, Powell and Lee counties—where the state's principal production has been—have held about as well as those in other states drilled under similar conditions, and there is much settled and partially-settled production in those counties that is quite profitable to its owners. Allen county is frequently referred to by prospectors who have casually gone over it as flashy and going to water. A few wells were drilled at Petroleum and one or two other places in Allen county some years ago and allowed to peter out because of unsatisfactory marketing conditions, and a few flash wells have been drilled since; but most of the actual development in Allen county has been within the last eighteen months or two years, with inadequate pipe line facilities—something like Kansas and Oklahoma a few years ago—and the snap judgment is apparently unwarranted. There is no reason to believe that southwestern Kentucky will not prove as profitable as other oil fields of similar character.

Up to 1913 marketed production in Kentucky all come from the counties of Morgan, Lawrence, Wayne, Wolfe, Floyd and three or four other scatter-

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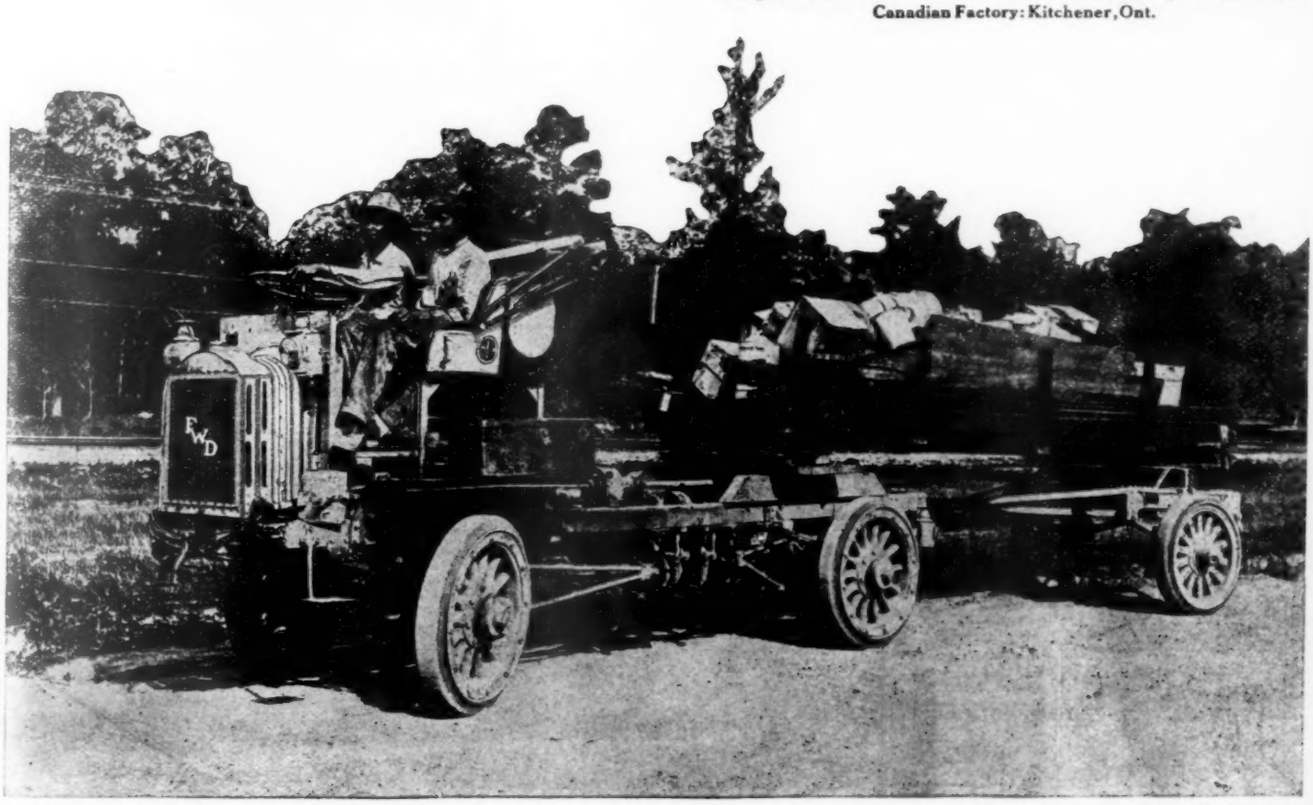

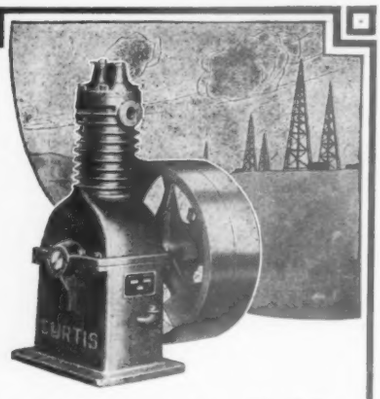

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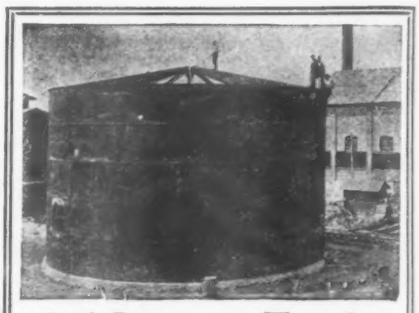
ed pools in Cumberland, Barren, and Allen counties. Wells in those counties drilled fifteen to twenty-five years ago have held about as well as wells in other states of the same age and are averaging as much per well today. This statement may, perhaps, be modified to explain that Kentucky's earlier production all come from the Big Indian, Weir and Berea Grit formations and not from the Corniferous strata, the latter formations having been generally productive only during the last four or five years and therefore having a much shorter period by which to measure comparative averages.

So little production has been developed in Kentucky, calculated by number of individual properties, prior to 1915, that the comparative range for settled and semi-settled production is remarkably small. Some owners of good production, when questioned, say they would not sell for $4,000 a barrel, with $5,000 a barrel occasionally mentioned. A few sales have been made at $1,500 a barrel, and $1,200 a barrel is mentioned as a fair price for semi-settled production. The Superior Oil Corporation, organized about a year ago, has been the largest purchaser of production, to the extent of possibly $15,000,000 in a year, for which it is said to have paid, on a per barrel basis, unusually high prices to secure undrilled acreage and thus build up a big production. Perhaps $1,500 per barrel might be quoted as an average price for production not over three years old, ranging from $1,200 for one to two-year-old stuff up to as high as $3,000 for choice properties, tho no recent sales at this price—excepting purchases by the Superior Oil Corporation—can be cited.

The fact that some water shows in Allen and Warren counties is urged against Kentucky production; but this item is subject to considerable revision after careful examination of particular properties. So much of the power and pumping equipment in southwestern Kentucky is light and inadequate to handle water in even moderate volume that a correct gage is not given and any snap judgment would be subject to revision when adequate facilities as to power and handling of wells are applied.

Except as to straight lime fields, or to an occasional flashy pool, it has been my observation that there is not a great deal of difference in the staying qualities of fields that have been given regular marketing facilities from the start and the wells have been handled intelligently. Even in Oklahoma and Kansas, where an excellent sand formation prevails, lack of pipe line and marketing facilities for years gave those states a blackeye compared by eastern fields, and production on the barrel basis went begging at scalpers' prices. Today, when pipe lines and oil buyers are scouring the fields for wells to connect and oil to buy, prices are paid that six years ago would have been called crazy by the same people who now are anxious to have them accepted.

Get the habit of turning to the Oil Industry Exchange page each week. Business opportunities of various kinds and bargains in second-hand equipment are always to be found there.



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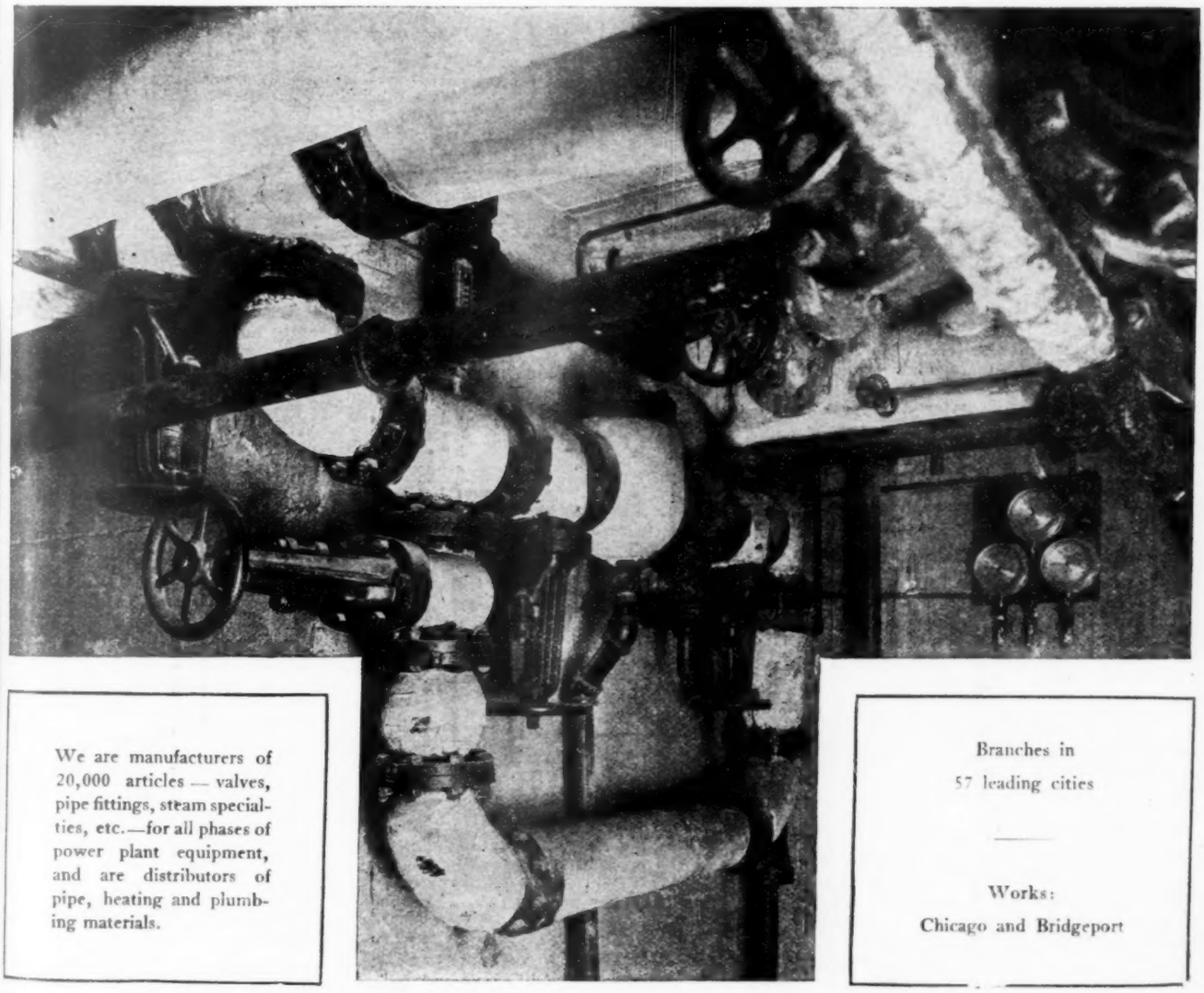

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Distinction Betwen Different Waters Found In Wells

By A. W. Ambrose

THE accompanying article is the second in a new series by A. W. Ambrose, superintendent, Bureau of Mines petroleum station, Bartlesville, Okla and forms a part of the bureau bulletin No. 195, "Underground Conditions in Oil Fields," which is now in press. That the results of experiments made by Mr. Ambrose and other bureau technologists and information gained by their observations of practical operating methods may be immediately available to the oil industry, the bureau has given permission to pre-publish excerpts from the bulletin.—Editor.

THE operator should consider the contents of a sand as an unknown quantity unless the sand has been tested, preferably by bailing or pumping, or unless there is positive evidence that the sand contains oil, gas or water. It is well to remember that in a drilling well filled to the top with fluid, as is done in California or where rotary tools are used, there is great possibility of this fluid holding back any showings of oil, gas or water. Unless the water is artesian, or contains some particular characteristic, as hydrogen sulphide odor, a water sand may be passed thru unnoticed by the driller. This is particularly true of a rotary drilled well where the fluid contains considerable mud whose specific gravity is heavier than the thin mud fluid or even clean water used in a well drilled with standard tools.

The writer had experience in some "sulphur water" wells which were drilled with cable tools. This is cited to show how difficult it is to tell whether or not a sand contains water when the hole is full of fluid. After testing and the use of water analyses on several wells, the sulphur water sand was definitely located in a certain area. In one well it was known that the well was deep enough for the sulphur water sand, but there was no evidence of "sulphur" in the fluid taken from the bailer when run to bottom, as the water in the hole was that previously run in from the hose. Inasmuch as the head of water in the hole was greater than that in the sand, no sulphur water came in. In fact, the sand slowly took rather than yielded water. The well was then bailed vigorously, after which the fluid smelled of hydrogen sulphide and gave a positive silver coin test* which was evidence that the well had reached the sulphur water sand.

*A common oil-field practice is to determine the presence of "sulphur" (hydrogen sulphide) by placing a bright silver coin in the water to be tested. If the coin turns dark, the test is positive, but if no film forms on the coin, it is considered that hydrogen sulphide is not present in appreciable amounts.

Those waters occurring in sands above the producing oil horizons are generally known as top or upper waters, and those below the producing oil horizons as bottom or lower waters. Where there are several producing sands, the water occurring between the producing zones is usually referred to as intermediate water. In addition to the different waters just mentioned, namely, top, bottom and middle waters, it is also necessary to consider in the succeeding pages edge water, water in the base of an oil sand and a lenticular sand carrying water.

A discussion is given below of the academic viewpoint where precise distinctions are made in the field between top water, bottom water, intermediate water, edge water, and water in the base

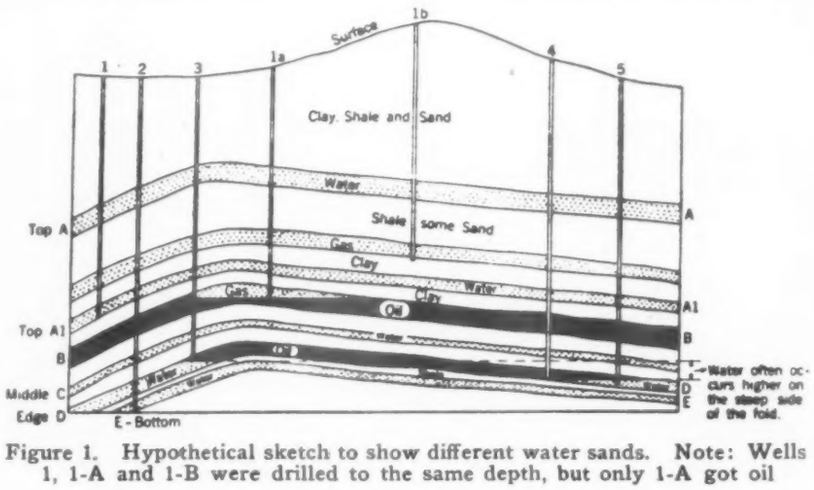

Figure 1. Hypothetical sketch to show different water sands. Note: Wells 1, 1-A and 1-B were drilled to the same depth, but only 1-A got oil

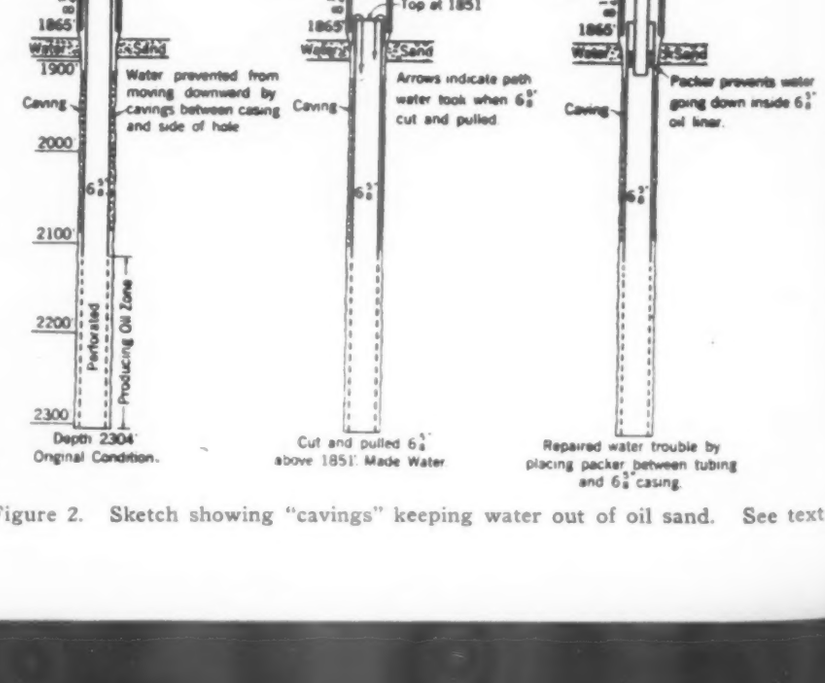

Figure 2. Sketch showing "cavings" keeping water out of oil sand. See text

of an oil sand. The operator does not always made these academic distinctions. A discussion of the practical terminology is given later.

Top Water

The top or upper waters are those lying in sands or other porous formations above the producing oil horizon. (See Figure 1, water sands, A and A-1, and Figure 6, sand A.) In some fields the operator may term top water that water overlying the main productive zone, even tho there are some shallow light producing sands higher up. Strictly speaking, such a water should be called middle or intermediate water.

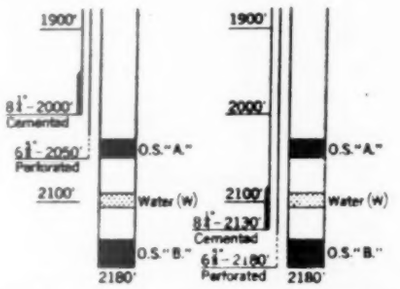

Figure 3. Sketch to illustrate additional cost of producing where there is a middle water

Shallow, potable, top waters are of value in many fields, also they often furnish water to the hole while drilling is in progress. When the drill reaches the producing oil horizons it is most important that top waters be permanently excluded from the hole. Of the various methods used for this purpose undoubtedly the cementing method† is the most satisfactory, altho a great number of satisfactory water shut-offs have been made by mudding‡ or by landing the pipe on a good seat of tough shale, sticky clay, hard shell or limestone, for a formation shut-off. Where the top waters have a considerable hydrostatic head the cementing method should be used. Before the pipe is landed, several feet of small hole should be drilled ahead in order to secure a tight fit for the casing shoe.

Samples of water from drilling wells should be collected for analyses.

The top water may have access to the underlying producing horizons thru a defective water shut-off, but water may enter the oil sands of a properly drilled well from a neighboring well, that is, the upper waters may have access to the oil sand in an adjoining well and from there work thru the oil sand to other wells. Bottom or other water may likewise come from a neighboring well.

In the well itself top water may have access to the hole by:

1. The shut-off being too high.
2. The water leaking around the shoe of the water string.
3. Poor coupling connections due to cross threading, or the pipe not being sufficiently screwed together.

†See Tough, F. B., Methods of shuting off water in oil and gas wells: Bulletin 163, Bureau of Mines, 1918.

‡See Lewis, J. O., and McMurray, W. F., The use of mud-laden fluid in oil and gas wells: Bulletin 134, Bureau of Mines, 1916.

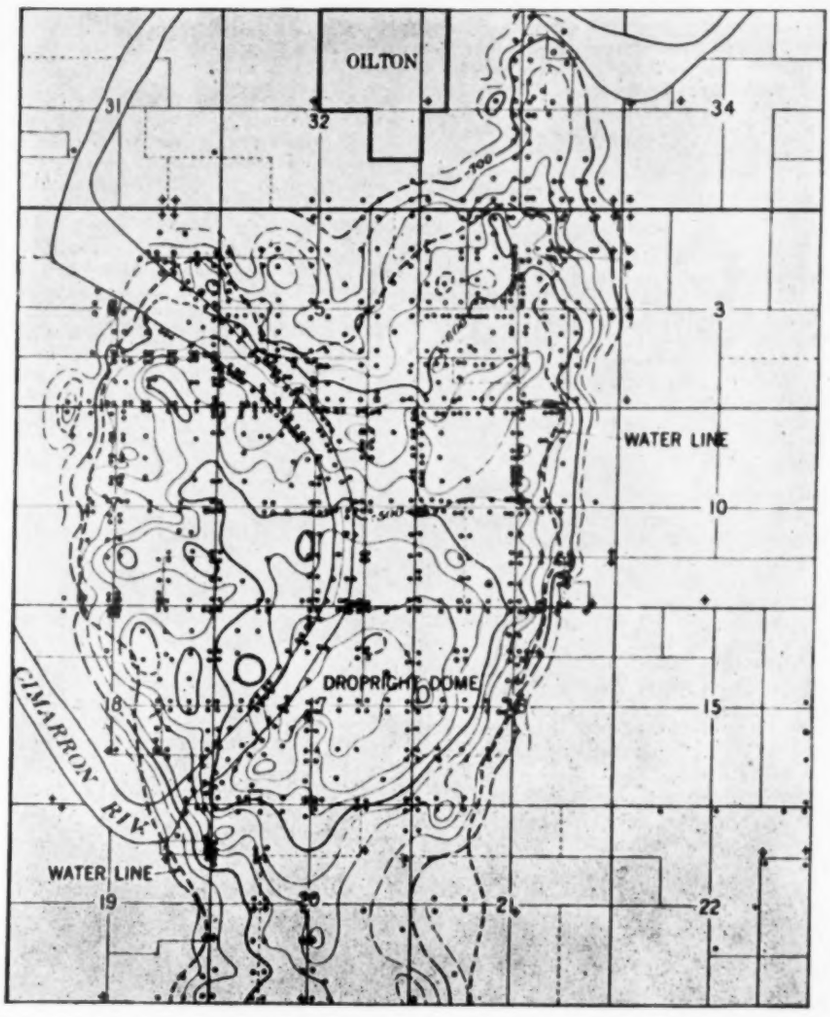

Figure 4. Map in vicinity of Dropright dome, Cushing oil field, Oklahoma, showing edge water line cutting across structure contours of Layton sand. After C. H. Beal, Bulletin 658, U. S. Geological Survey.

4. Collapsed casing.
5. A split in the casing, the pipe worn thru by drilling-line wear, or corrosion of the casing due to strong corrosive waters in the sands.

An interesting example of a water string being cemented too high is shown in Figure 2. It was never understood why this well did not make water, as the correlation indicated that the shut-off was too high. During a period of reclaiming pipe, the oil string was cut at 1,851 feet and pulled, as shown by the center sketch of figure 2. Following this, the well showed an appreciable amount of water, and for some time the source of this water was not known. A chemical analysis and a study of adjacent wells indicated the water was coming from a water sand located just below the casing shoe at 1,865 feet. A packer was then placed on the tubing between the liner and the tubing, as in the right-hand sketch of figure 2. This stopped the well making water.

The conclusions reached were that prior to cutting the oil string the water in this sand did not have sufficient head to rise to the surface between the oil string and water string, and it could not move downward because of the "cavings" that had fallen in between the side of the hole and the

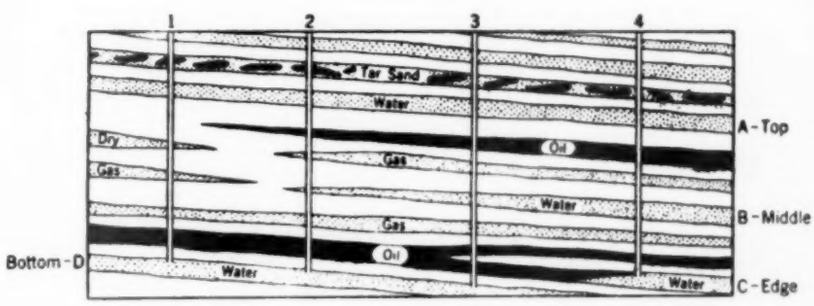

Figure 6. Sketch showing lenticular sands.

blank pipe. Only the bottom 190 feet of the oil string were perforated. Following the insertion of the packer, the water could not move down inside of the oil liner because of the packer placed between the tubing and the liner. This work emphasized the necessity of knowing the depths of the perforations and location of the water sands, also the practical application of water analyses.

Bottom Water

Bottom water, as the name implies, is that water occurring below the producing oil horizon. (See fig. 1, sand E, and fig. 6, sand D.) The writer has distinguished between water in the base of an oil sand and the true bottom water which occurs in a separate sand from the oil, usually separated by a "break" of shale or other impervious formation.

Bottom water has forced itself into prominence by the serious damage and trouble caused in many fields. To avoid such trouble, it is important to learn the exact distance between the top of the water sand and the base of the oil zone, so that the operator can avoid drilling too deeply. Unfortunately, a few wells must be drilled into bottom water before it can be accurately located. After these wells have been plugged and the water shut off, future trouble of this kind should be avoided.

When a well is brought in and apparently making oil and water from the same sand, the operator should not be hasty in concluding that they occur in the same sand. Such an occurrence is entirely possible, but it may be that a small break or parting separates the oil sand from the water sand. When the parting is small, great skill and care are required to avoid drilling into or shutting off the bottom water. An impervious break of one foot will serve as a barrier to separate the oil and water. Unless this parting is a very hard limestone, a very tough shale, or some such formation that will attract the attention of the driller by certain drilling characteristics, it may be passed by without notice. This is particularly true if a well is "drilled in" to the oil sand by a rotary.

Before deciding that the oil and water occur together, a careful investigation with proper tests should be made to determine whether or not there is a break between the two. If such a parting exists, there is much more hope for repairing the well, but if the water and oil are associated together the repair of the well is very difficult.

Intermediate and Middle Water

The water occurring in a sand located between two or more productive oil horizons is referred to as intermediate water. If there are only two productive sands, the term middle water is often applied to the water occurring between them. (See Fig. 1, sand C, and Fig. 6, sand B.) Intermediate or middle water which has a large head presents a complex and often expensive developing problem, because it is not safe practice to produce from the upper and lower zones in the same well. In fact, where the water has a large head, it precludes the oil sand and water sand being exposed in the same well, as the head of water will prevent the oil coming in.

Packers have been used in an effort to keep the water in its own sand, but in general they are not successful.

A method for developing an area with a middle water (W) of large head is brought out in figure 3. It would not be possible to cement at 2,000 feet and produce from both oil sands, "A" and "B," because the water would hold back the oil and flood "A" and "B." In developing such a property with conditions as shown in figure 3, the operator can land a water string at about 2,000 feet and deepen to 2,055 feet and produce from oil sand "A." When this sand is exhausted he could pull the oil string and land and cement a string of casing at about 2,130 feet, which is between water sand (W) and oil sand "B," and then produce from sand "B." This would take the least number of wells.

If it is desired to obtain all the oil as soon as possible, two series of wells may be drilled, one to produce oil from sand "A," and the other from sand "B." If two such series of wells are drilled, it is essential that sufficient cement be placed behind the pipe in the wells producing from oil sand "B," so that the top of the cement reached above oil sand "A," This is to protect sand "A" from the underlying water. Again a heavy batch of mud-laden fluid may be used behind the 8¼-inch casing at 2,130 feet to protect sand "A." This may be in addition to the cement, or without the cement, provided great care is taken to mud off oil sand "A" and water sand (W).

Edge Water

Edge water is the water occurring in the down slope portion of an oil or gas stratum. (See fig. 1, sand D, and fig. 6, sand C). The line of contact between the oil or gas and the water in fields of high dip is usually referred to as the "edge water line." If the dip is steep, the plane of contact between the water and oil will be small in the direction of the dip, but where the dip is almost flat the plane of contact will be considerable. Thus, wells drilled down slope from the edge water line will encounter water in the same stratum in which oil or gas is found up slope, assuming, of course, a fairly uniform porous stratum.

The generally accepted anticlinal theory for the accumulation of oil and gas is dependent upon the difference in specific gravity of gas, oil and water. Water, being the heaviest, is at the base of the collecting stratum, and as the oil or gas slope is withdrawn, it is replaced by the water. The rate of approach of the edge water is largely dependent on the rate of withdrawal of the oil and gas, the porosity of the sand, the hydrostatic pressure, and the temperature of the oil.

Figure 1 indicates that edge water occurs higher on the steep side of the field. This is often true.

The edge water line more or less parallels the underground contours, but in many cases it cuts across contours and occurs up slope. By following the dashed line representing the edge water line, in Fig. 4, it will be seen that it crosses the contours, after no particular fashion. It crosses the 550-foot contour in the northeast quarter of section 4. In section 18, the edge water line runs well up on the dome. Attention is called to the fact that this field has several oil sands and that the producing wells shown outside the edge water line may be drawing production from other than the edge water sand.

In the case of excessive development locally, the edge water line may cut across contours. This is shown in Fig. 5. The encroachment line swings up irregularly from the original edge water line due to the great amount of oil withdrawn from the wells along the section line. As a result water appears in well B, but well A, which was drilled much later, has no water, even tho farther down the slope. No great amount of oil has been withdrawn in the direction of A, due to its being a comparatively new well. The edge water was drawn up slope to replace the withdrawn oil and gas along a narrow belt to a point where there has been excessive development locally, in this case, along the section lines. Such a condition forms an edge water line

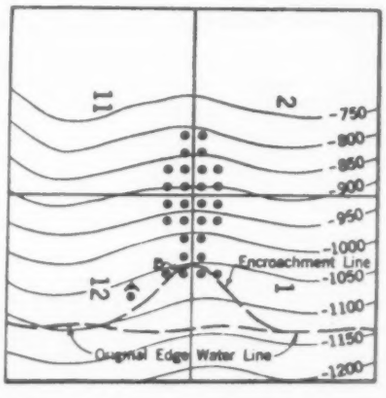

Figure 5. Sketch to show edge water line cutting across structure contours due to excessive development locally

that cuts across underground contours, resulting in a narrow belt from the point of development to the original location of the edge water line in which a well will produce water rather than oil.

In some of the older wells, flow channels for withdrawal of the oil and gas may be established in such a way that certain wells down slope in the heart of the water area may be bypassed, that is, channels established around these wells, due perhaps to difference in porosity, cementation of sands, or filling in of the sand pores with mud or comminuted shale surrounding these wells. The water thus works up thru the flow channels already established, and wells up the slope may show water while a few wells down the slope will be free from water. In replacing the withdrawn oil and gas, the water is certain to entrap large quantities of petroleum. Unfortunately when edge water is present sooner or later production of oil will suffer.

Water in Base of Oil Sand

Water may occur in the base of an oil sand, altho before drawing such conclusions it is advisable to consider carefully whether or not there is a small formational break of an impervious bed between the oil and water.

In a flat dipping bed containing both oil and water, the plane of contact be-

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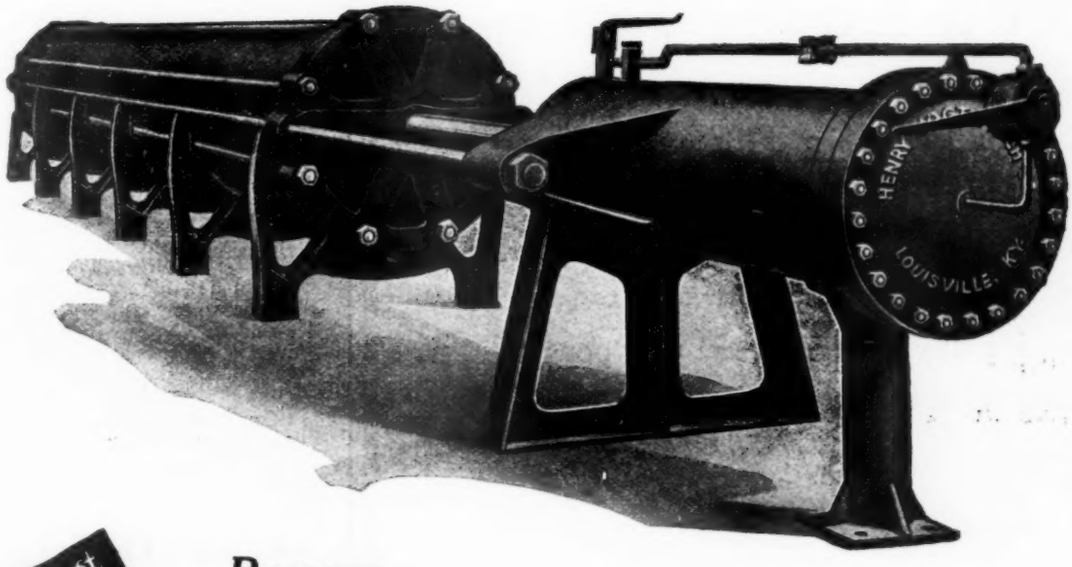

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tween the oil and water will be extensive provided the porosity of the sand is more or less uniform, but as the dip steepens, the plane will be smaller until in steeply tilted beds it is referred to as edge water.

When water occurs in the base of the oil sand, the operator is certain to experience much difficulty in future operations. Every effort should be made to delay the advance of the water where possible, so that the maximum amount of oil may be recovered.

Lenticular Water Sand

Formations are often lenticular and pinch out in a short distance. If such a lenticular sand carries water, it is termed top, bottom or middle water, according to its location with respect to the oil sands.

A lenticular sand containing water may completely pinch out between two impervious shale members, as in figure 6, sand B. Under such conditions it is very apparent that the operator must carefully work over his well logs in order to arrive at the exact conditions underground. When marked lenticularity occurs the sand containing middle water "B," as found in well 2, Fig. 6, may grade out and entirely different conditions exist at a corresponding stratigraphic depth in well 1. Well 1 encountered gas in a sand stratigraphically equivalent to water sand "B," while if the sand had been continuous water would be expected. In such a case the operator might be misled into thinking this was an edge water below the gas zone.

An experience of an operator is cited to show the difficulties occasioned by a lenticular sand. A well was producing oil and no water. Later a well was drilled 600 feet distant and to the same stratigraphic horizon. It came in producing water with the oil. The second well caused much trouble and tests were made for bottom water and top water. After a great deal of testing and detailed study, it was decided that the water sand in the second well pinched out before it reached the first well. When a lens of sand pinches out on all sides, then the hydrostatic head of the entrapped water is often low.

(This subject will be further discussed in a coming issue.)

Foreign Opportunities

The following information as to inquiries for American products is taken from the Commerce Reports gotten out daily by the bureau of foreign and domestic commerce of the United States Department of Commerce. Reserved information may be obtained by addressing the bureau at Washington, giving the number of the opportunity about which further details are desired.

33334.—Dealers in machinery in ITALY desire to secure an agency for the sale of LUBRICATING OILS of all kinds. Correspondence may be in English; Italian is preferred. References.

33329.—A commercial association in CHILE desires to secure an agency and purchase for Chilean markets, OILS. Correspondence should be in Spanish. Reference.

Committee Gives Rate On Each Denver Hotel

CHICAGO, July 24.—A schedule of hotel rates which will apply in Denver during the twelfth annual convention of the Independent Oil Men's Association, September 28, 29 and 30 and October 1, has been compiled by the committee which is in Denver working on arrangements for the gathering. Return fares have been fixed at about one and one-third from all points east of the Missouri river.

It is suggested by the committee that reservations at the hotels be made as early as possible and assurance is given that all who attend will be satisfactorily cared for. The list of hotels with rates is as follows:

One Person	Rooms without Bath	Rooms with Bath
Adams Hotel	$3.00 up	$5.00 up
Albany Hotel		5.00 up
Auditorium	3.00 up	4.00 up
Brown Palace (Single)		5.00 up
(Double)		8.00 up
Kenmark	3.00 up	4.00 up
Metropole	3.00 up	5.00 up
Oxford	3.00 up	5.00 up
Savoy	4.00 up	5.00 up
Shirley	3.00 up	5.00 up
Standish	2.50 up	4.00 up

Special trains will leave New York Friday, Sept. 24th, at 5:30 P. M. via the New York Central, Chicago, Milwaukee & St. Paul and Union Pacific, arriving in Denver Monday afternoon; stopovers at Chicago and Kansas City.

L. F. Ross, Steger Building, Chicago, is chairman of transportation committee.

Eastern members communicate with A. J. Squier, 27 Coenties Slip, New York City, or R. A. Wotowitch, 111 N. Broad St., Philadelphia, Pa.

F. G. Shreves, formerly of the Central Refining Company, Lawrenceville, Ill., and the Consumers Refining Company, Chicago, is chairman of the sub-committee on space and reports a lively demand for displays from Denver concerns.

Mr. Shreves has been instrumental in getting the convention for Denver and is doing everything he can, with the other members of the committee, to make it a success.

An estimate that landowners of Oklahoma received a total of $52,000,000 from oil and gas production is made in the pamphlet just issued on the resources of that state by the Exchange National Bank and the Exchange Trust Company, of Tulsa, in connection with the regular monthly publication put out by them. The estimate of the landowners' shares of revenues from oil and gas attributes $20,000,000 to leases; royalties, $30,000,000, and bonuses, $2,000,000. These companies figure nearly half of Oklahoma's 44,000,000 acres to be under lease to oil companies.

CHICAGO, July 24.—C. E. Beroth, president of Acme Petroleum Company with general offices in Chicago, is visiting the Kansas City and Tulsa offices of the company. The growth of the business in the Mid-Continent has made it necessary for Acme to take larger quarters in Tulsa and the offices have been moved from the First National Bank Building to the Atco Building. E. J. Freeman, treasurer of the company, has charge of the Tulsa office.

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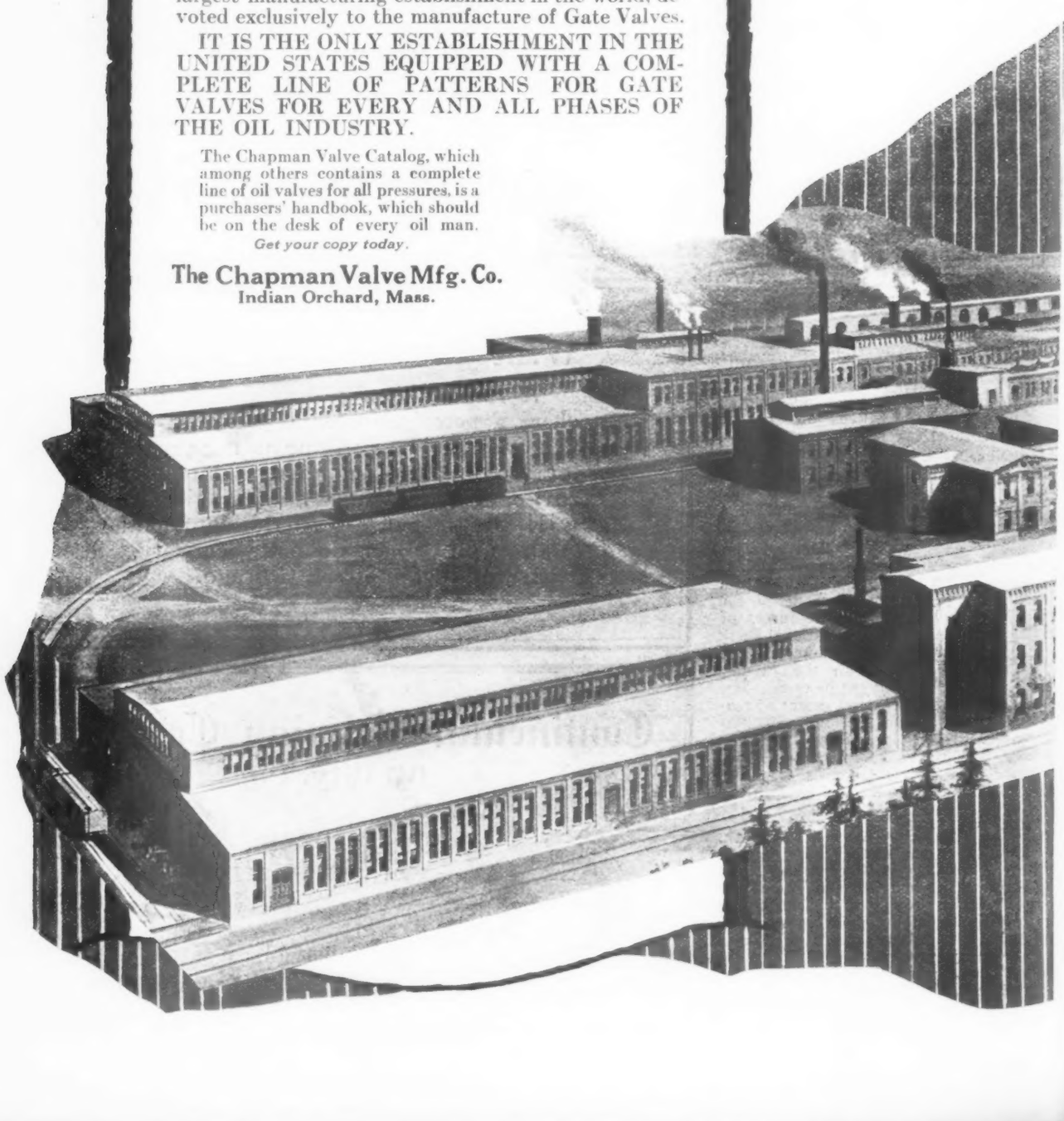
The Chapman Valve Mfg. Co.
Indian Orchard, Mass.



Personnel Of Petroleum

By H. L. Wood

H. L. Wood

J. B. Hazlett, of the West & Hazlett firm, the Bair Oil Company and the Kasoming Oil Company, leaves Denver during the week for the Yellowstone Park for recuperation. He lives in Denver now most of the time and believes he has bested the kidney trouble that has bothered him several years. H. E. West, his partner, who stays at the company headquarters in Cheyenne, Wyo., most of the time, was in Denver during the week. Both gentlemen went to Washington some weeks ago and personally saw Secretary of the Interior Payne, who quickly granted them a lease covering 280 acres in the Salt Creek field in Wyoming, one-seventh royalty and no bonus, and issued a permit to immediately begin running oil from three wells on the lease that had been shut in for a long time, and drilling operations are beginning. It is understood that Secretary Payne intimated that if producers would personally see the department and cut out attorneys, politicians and intermediates he would quickly canvass the merits of applications and approve the leases. After three years' hard work and the expenditure of about $2,000,000 West & Hazlett and the Prairie Oil & Gas Company—operating as the Kasoming Oil Company in Wyoming—are now in position to begin taking profits, sales of crude oil from the Lost Soldier field during the last year having been nearly $900,000.

* * *

The death of Mrs. J. H. Finn in Wichita, Kans., leaves the husband and two children, the father and many friends to mourn. The daughter of Daniel Roach, of Marshall, Ill., for years general superintendent of pipe lines for the Ohio Oil Company and the Illinois Pipe Line Company, deceased married J. H. Finn when he was with the Texas Company at Tulsa, and then moved to Wichita, Kans., when he became manager of Texas Company affairs in Kansas. Mr. Roach, who has retired from the Illinois Pipe Line Company, attended the funeral.

* * *

A. R. Rich, a former Oil City, Pa., operator, with the Ohio Cities Gas Company (now Pure Oil Company), has resigned to engage in the contracting business with his son, James B. Rich, of Eldorado, Kans., with a branch office at Lawton, Okla. Mr. Rich, Sr., drilled in the Ohio Cities Company's first well on Cabin creek, Kanawha county, W. Va., which opened a field and property that has made the company a lot of money and caused the erection of a 4,000-barrel refinery there that is very successful.

* * *

Merle J. Heald, son of Jerome R. Heald, of Tulsa, is now with the Producers & Refiners Corporation at Fort Worth, in the production department, of which George E. Summers, of Dallas, is general superintendent. Merle was just a kid when the family moved to Tulsa from Indiana, his father for some years having been production superintendent for the Eastern Oil Company, of Buffalo, N. Y., during all its development work in Oklahoma, Kansas and other western fields, and has grown up with and into the producing business. Mr. and Mrs. J. R. Heald are spending the summer at Newasse, Ind., where a married daughter resides.

* * *

W. G. Skelly, president of the Skelly Oil Company, Tulsa, has returned from getting the family located in its summer vacation home, and is hard at work with company's producing, refining and casinghead gasoline activities in Oklahoma, Kansas and Texas. There isn't much about Skelly Oil Company affairs that doesn't come directly under the personal supervision of Mr. Skelly, which accounts for the remarkable expansion of the business that he owned only a few years ago as an individual. He is one of three individual operators of Tulsa, all starting about the same time and in the same way, each of whom works every day supervising the principal details of their corporation activities. The other two are Grant C. Stebbins, president of the Gladys Belle Oil & Gas Company, and Chas. F. Noble, president of the Chas. F. Noble Oil & Gas Company and the casinghead gasoline corporation of the same name. It almost makes a fellow want to go off somewhere and rest just to watch these men work, they're so deucedly insistent about keeping everything moving. As to appearance on the streets, Grant Stebbins is probably the most democratic, as he just goes out coatless when in a hurry, while Bill Skelly and Charley Noble don their coats when outside. The Gladys Belle Oil & Gas Company has 7,000 barrels daily production in many fields and the boss knows about every well.

* * *

A personal letter from Ralph W. Carroll, in New York City, states that he is about to leave for Bowling Green, Ky., where his brother, Ion, is located, engaged in the oil-lease brokerage business. Both of them were at Barbourville, Knox county, Ky., several years ago, Ion being a particularly well-posted man about Kentucky development. Mr. Carroll—who has traveled all the oil fields of the United States, Canada and Mexico for the last forty years—says: "Last year, or even now, in New York comparatively little was heard of Kentucky, a few favored spots in Oklahoma and Kansas—and lately not much of Texas or Louisiana; but Mexico, Colombia, Venezuela and other southern and faraway fields are in the limelight." With oil, as with diamonds, rubber, gold and other precious products, distance not only seems to, but actually does, lend enchantment to the persuasive stories of the glad-handers who dub themselves "promoters" and frequent the middle of Broad street and temporary joint offices here and there wherever credulous persons of little knowledge can be the most successfully enticed. The unbounded optimism that nature has implanted in mankind causes many of us to believe that the professional slick guy can take a few dollars of our money and invade Mexico, South America, Africa or New Jersey and clean up the natives and bring it all back to us, with a lot of curios thrown in as an evidence of personal friendship. Therefore, oil fields close at home don't amount to much—in Wall and Broad streets, New York.

* * *

William Outman, of Denver, well known in the oil brokerage business, is in Calgary, Alberta province, Canada, and will probably be there some time in connection with his interests. He gave Wichita Falls and Fort Worth the twice over when the orgy was the rampantest, but was not seriously involved.

* * *

H. G. Naylor, traffic manager for the Midwest Refining Company, Denver headquarters—who, by the way, is a brother Wooden Nutmegger—took a few minutes from scrambled transportation affairs the other day, during a brief visit, to try to extract a little sympathy from me in re his particular troubles with railroads and other transportation agencies. That Mr. Naylor has his own troubles is beyond question; but what—speaking as one Christian to another—does he expect from a lone oil reporter and traveler who is in a continuous process of appeal and request for just a little attention from railroad, cab, porter and postoffice transporters, barbers, food and clothes purveyors, women who have bought shares in oil companies, men who have bought oil leases from grafters, millionaires and multimillionaires who have had troubles and differences with government agents, and all the other barnacles, parasites and antennae of civilization, progress, uplift and civic virtue and righteousness or any other fellow now has to beat his way thru who has to travel and work for a living? From sagebrush to sublimity isn't far, but the route is beset with manifold troubles, snares and sinister graft, Herbert, and we are all only fellow-workers in the same vineyard—yours in carloads and mine in suit-cases—wholesale and retail, with the retail customer accumulating a long string of previous profits.

* * *

In the absence of any specific individual name as an excuse to bring it

REPUBLIC

The Barrel that "Makes Good"

WHEN our customers continue to place their orders for steel barrels with us year after year, —many of them since back in 1911—it is only natural to believe they are satisfied with the barrel itself, the price and the service rendered by the manufacturer.

Our quotation will interest you and the first shipment will convince you that from now on your barrels will be made by—

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AMERICAN CAN COMPANY

within the titular scope of this department, Providence will have to stand for this publicity. Congested moisture, crossing the Continental Divide during the week, made a tail spin and busted a couple of clouds at the mouth of Platte canyon just above Denver and just below Pueblo, Colo. The south end cloudburst was a humdinger, causing the turgid Arkansaw river and irrigation ditches to surge out over the adjacent sagebrush from Rocky Ford southeast to La Junta and Las Animas, flooding cantaloupes, sugar beets, streets and surface impedimenta generally. If your cantaloupe is watery and alkaline, it's the cloudburst; if your sugar is dark and gritty, it's the cloudburst. If the unfortunate residents of Tulsa, Okla., find pre-Cambrian stuff in their bath tubs and kettles, they may retain their presences of mind, add a curry-comb to the usual Tulsa bath paraphernalia of whisk brooms and dustpans—it's just a cloudburst up in Colorado, and they may find a few rainbow trout in the kitchen sink. Living along the Arkansaw is sure a picturesque pastime.

* * *

Judge John J. Shea, of Tulsa, accompanied by Mrs. Shea, sailed from New York last Saturday for Europe, to be absent two months touring. Judge Shea has been pretty busy for two years, in Washington and elsewhere, working out tax problems for Mid-Continent oil producers, and is entitled to a rest.

* * *

C. G. Galbo, of Boston, Mass., after a month of investigation of the oil fields of Oklahoma, Texas and Louisiana, left Independence, Kans., during the week for home. He was accompanied by his attorney, Joseph F. O'Connell, of Boston, a former congressman from that district, who had been to the Democratic convention at San Francisco. Mr. Galbo had just concluded the purchase of 120 acres in Okmulgee county less than a mile southeast of the Waite Phillips great lease, for which he paid $100,000, and will begin its development, there being three Dutcher sand wells on the tract. Mr. Galbo publishes the International Oil Investor, Boston, and financed an oil company at Independence, Kans., having acquired considerable experience in petroleum activities along legitimate lines. His paper has been getting after the fake promoters in Boston and New York, and they threaten to bring action against him, but he has the records as protection. Mr. Galbo from now on will be quite active in the Mid-Continent fields, both as a financier and as a producer and operator. He is an established broker in Boston and well acquainted in New York and Baltmore.

* * *

E. T. Wilson, president, and C. E. Strong, vice president, of the Continental Oil Company; E. E. Watton, president of the United Oil Company and the Inland Oil Company; Superintendent Shannon, of the United and Inland companies, and Tom Bell, president of the Buck Creek Oil & Gas Company, all of Denver, visited the Lance Creek field in eastern Wyoming during the week. The Continental Oil Company, of Denver—a subsidiary of the Standard Oil Company of New Jersey—controls the United, the Inland and the Buck Creek companies. Thru the latter corporation the personal hold-

RITER-CONLEY Co

PITTSBURGH, PA.

WHEN a tank of any capacity up to 80,000 barrels, an agitator or a battery of stills is purchased from Riter-Conley Company the buyer receives something more than steel plate work.

Engineering skill in the designing and fabricating of the plates—engineering skill in the erection, together with a thorough knowledge of oil refining and storage problems enter into every Riter-Conley Company job.

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But storage tanks of any capacity or complete refineries are only part of the wide scope of this company's service.

The facilities for manufacturing and erecting steel buildings and all kinds of structural steel work, together with the largest steel plate shops in the country, are additional reasons why it will pay you to ask a Riter-Conley Company engineer to figure on your work.

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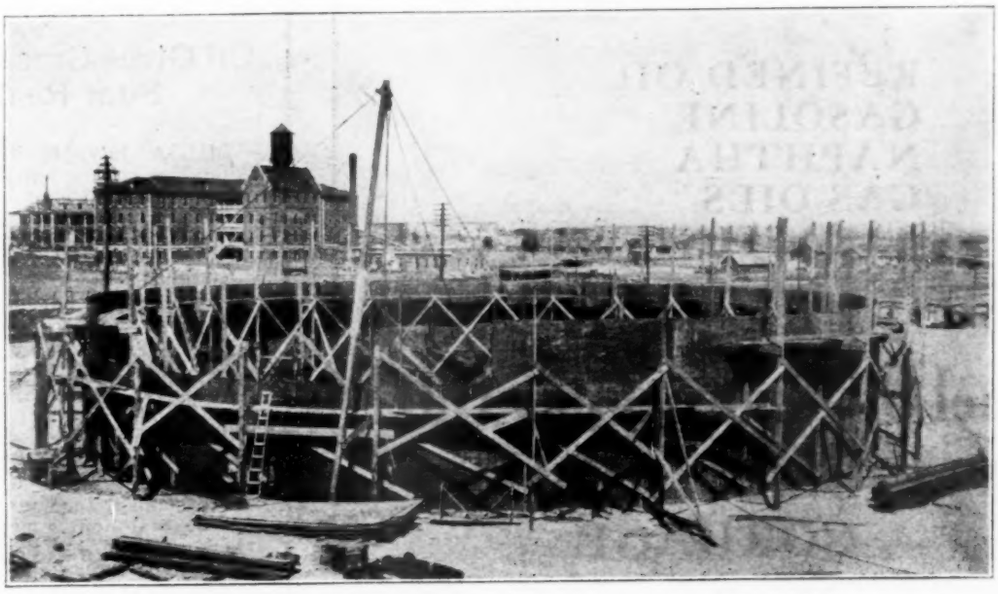

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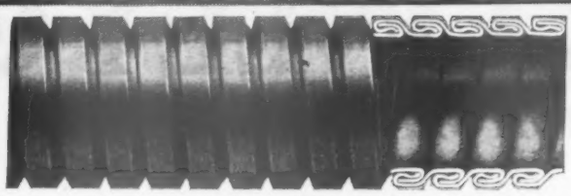

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ASPHALT

Fuel Oil--Lubricating Oils

CYLINDER ENGINE
CORDAGE

RED AND PALE PARAFFINE OILS

ings of Mr. Bell in the Lance Creek field were secured and many wells and rigs have been started and two wells completed for a small oil and heavy gas production. The encroachment of water in practically all the Lance Creek wells has put an embarrassing complexion on development there, and the officials evidently were getting down to brass tacks right on the ground to protect a heavy investment. The Continental Oil Company is the oldest distributor of refined petroleum products in Rocky Mountain territory, having been in business forty years, operating a modern refinery at Florence, Colo., thru the United Oil Company, and its production problems are serious at times. Mr. Wilson, since his administration as president, has greatly expanded company interests.

Imperial Oil Urges Saving Of Gasoline

TORONTO, July 24.—Thru an advertising campaign in newspapers and farm papers thruout Canada, Imperial Oil, Ltd., has begun an educational campaign for the public on the subject of gasoline. The question has been attacked from a different angle than have a majority of such campaigns in the United States. Conservation of gasoline is the point stressed.

Warning the public that wasteful methods will increase the price of gasoline to the point of preventing the use of thousands of cars, Imperial estimates that a half gallon to the car is wasted each day thru carelessness, over-use of cars and needless mileage. This, it says, means 200,000 gallons wasted in Canada each day, or 73,000,000 gallons each year.

Oil Gives Crossland First Real Vacation

TULSA, July 24.—Bill Crossland, of Okmulgee county, has for years desired a real vacation, but somehow never found the time. Crossland was one of the early settlers in this country, and by the time he had acquired his 640 acres of land and put it under cultivation, he kept finding more work to do.

Then Waite Phillips, Tulsa oil producer, who owns leases on most of Crossland's farm in what is now the heart of the West Okmulgee pool, Secs. 22, 23 and 15, township 4, range 11, drilled in the discovery well and the pool, located partly on Crossland's land, is making around 20,000 barrels daily.

Crossland's income is more than $4,000 a day and is increasing steadily. He has found for the first time that he is in position to take that long deferred vacation—and as many others as he may want. The first one planned was a motor fishing trip to Colorado.

The salesman or refinery assistant you have been looking for may be offering his services in the Oil Industry Exchange this week. Better turn to that page near the back of the book.

REFINERY-TANK WAGON MARKETS

Pacific Coast Gasoline Purchase Not Yet Reflected In General Market

NO effect has yet become apparent in the general marketing situation from the purchase by the Standard of California of six train loads of gasoline from the Mid-Continent plants to relieve the gasoline shortage on the coast. In fact, gasoline was perceptibly weaker at Tulsa at the end of the week than during the week preceding. This is accounted for by most of those in touch with the situation by the fact that the credit restrictions of the Federal Reserve Board are just beginning to be keenly felt in the middle west.

Purchase of Automobiles Reflects Restriction

With regard to these restrictions, it is reported that the tight credit situation has considerably lessened the purchase of automobiles and this is just beginning to be felt in connection with gasoline consumption in this section. It is expected in many quarters that the purchase of 1,500,000 gallons of gasoline in the Mid-Continent for west coast use is the precursor of a steady demand from the Pacific coast states that will finally have a considerable bearing on the demand at all refining centers.

At the western Pennsylvania plants some inquiries are being reported from middle western territory jobbers who generally get their supplies of gasoline from the Mid-Continent, evidently with the idea on the part of the jobbers of connecting with a supply in case the western demand cuts down the available gallonage from the Oklahoma and Kansas and Texas plants.

Foreign Nations Slow Up on Purchases

Eastern refiners who have been selling considerable amounts of their products for export are finding that foreign buyers are becoming exceedingly conservative in their purchases. In fact, some of them have found that the lack of ocean tonnage and the numerous strikes of waterfront workers are not the only factors that are holding up foreign shipments.

When bottoms are available and the goods are ready to ship, many companies have found that it is impossible to get shipping instructions from their customers. Not many of the foreign buyers seem to be canceling their orders outright but they are stalling for time, trying to find out just which way the wind is blowing.

Demand for fuel oil is strong all over the country and the price is strengthening at the Tulsa and Gulf Coast refineries, altho there is a slight easing off in price discernible at the western Pennsylvania plants.

Fuel Oil Stronger; Gasoline Weakening

Staff Special

TULSA, July 26.—But little change can be noted in marketing conditions in general during the current trade week. Gasoline is somewhat weaker as to the spot market, but refiners are refusing to quote over August. Oklahoma refiners have not shared in the California demand, the bulk of this product moving from Texas points as it is more plentiful and freely offered in that territory and enjoys a freight advantage.

Some students of marketing conditions in the Mid-Continent attribute the present softness of gasoline to some extent to the fact that the restriction of credit iuaugurated by the Federal Reserve Bank has tended to curtail the purchase of motor cars for pleasure purposes. In this connection it is pointed out that "automobile loan sharks" who have done a thriving business in the southwest, are refusing to accept motors as collateral on the customary basis.

Export outlets for kerosene continue closed. There is some small quantity of this moving to export terminals, but it represents purchases of several months ago. The same tightness prevails in the fuel oil situation that has existed for the past several weeks. The spot market for this product is extremely strong and with the present coal situation is expected to remain stationary for some time.

Gasoline Stronger; Cylinder Stocks Off

Staff Special

PITTSBURGH, July 26. — Gasoline continued the strongest product at the western Pennsylvania plants during the week with trading rather slow generally, with the exception of fuel oil. There is a good demand for this product, altho the price has weakened somewhat from that ruling a week ago, most of the fuel oil moving at from 12 to 12½ cents a gallon.

Kerosene is moving rather slowly, altho it shows no appreciable weakening in price. The neutrals are holding their own at about the general level of a week ago. The cold test stocks, however, have shown a considerable strengthening which is attributed to the fact that few of the refiners have been making these products and the stocks fell to a point where it would not meet the demand. Increase in the ruling price of around 10 cents a gallon is reported. Cylinder stocks generally registered a decline during the week.

Cars are moving more freely than for

many weeks, the only bar to free movement being in the direction of the seaboard where most of the roads are embargoed against shipments. Freight is not moving from the New York and Philadelphia water fronts and the roads are refusing freight in order to prevent further congestion on the docks.

'Lub' Oils Strengthen At Gulf Plants

Staff Special

HOUSTON, TEXAS, July 24.—An indicator of lubricant demand is found in the receipt of inquiries on the Gulf Coast for quotations in small tanker lots, and in one instance for a total of 4,000 tons of red oils over a period. No orders are being booked on bulk quantities of this character, as none of the plants on the Gulf Coast have a sufficient quantity of lubs to make possible the filling of bulk orders in tankers. Such inquiry is attributed to the result of efforts to obtain lubs in bulk for the reason that barrelling costs could be cut down under this type of purchases.

Both red and pale oils continue in heavy demand with higher quotations being made on a few grades. These include 500 viscosity No. 3½ color with a high range of 43 cents and 750 viscosity No. 4 color with high range of 53 cents, both in unfiltered grades.

Spot quotations on fuel oil, in South Texas, are still being made as high as $3.50 a barrel. The future of the fuel market, particularly when the fall buying begins, is considered by students of market conditions to hinge upon the policy of industry generally this winter. A general curtailment of industry would tend to keep prices lower than could be otherwise expected, but a continued activity coupled with normal demand is calculated to make for new high record prices. It is generally considered that the coal industry is in for a hard winter from the viewpoint of transportation at least, but this problem would not apply to the same extent to oil fuel upon which much better movement is generally possible, especially in solid train shipments.

Little Change In Export Situation

Staff Special

NEW YORK, July 28.—There have been no significant developments regarding the export situation during the week. Prices have undergone no changes, and there has been little variation in the character of operations. The demand for gasoline and the napthas holds the center of foreign buying interest, and most of the houses report a readier fulfillment of these requirements. It is understood that midwestern supplies are contributing more freely to the satisfaction of this trade.

Slight improvement is noted in the export inquiry for kerosene. The movement of package goods is still slightly handicapped by the difficulty in securing casing material. The Standard, New Jersey, had a little trouble by the strike of a few of its men in the casing and can department, but there was no difficulty in securing men to take the place of the

Refinery Markets, All Products

Pennsylvania, Oklahoma, North and South Texas

FOLLOWING are the average market prices on the more important petroleum products in cents per gallon f. o. b. refinery in Oklahoma, Texas and Pennsylvania. These are actual prices at which the bulk of each product is moving from the refineries at the present time. Anyone having knowledge of different prices which have obtained on any considerable quantity of any of the products mentioned will greatly favor us by advising us at once.

Prices effective July 26.

GASOLINE AND NAPTHAS

Pennsylvania — Prices, July 26

54 Naptha	25¾
56 Naptha	26¾
58 Naptha	26¾
60 Straight-run gasoline	27¼
62 Straight-run gasoline	27¾
64 Straight-run gasoline	28¾
68 Straight-run gasoline	29¾
58-60 Blend, 460 end point	26¾
60-62 Blend, 450 end point	26½
62-64 Blend, 450 end point	26¾
66-68 Blend, 440 end point	27
60-70 Blend, 440 end point	27-27½
68-70 Blend, 420 end point	27¾

Oklahoma

50-52, 450 end point	22 -22½
56-58, 450 end point	22¾-23¾
58-60, 430-440 end point	23¾-23¾
60-62, 400 end point	24½-25
62-64, 375 end point	25½-26
64-66, 365 end point	26½-27
58-60, 140 l. b p.-428 e. p.	23½-24
80-84 Raw Casinghead	20 -20½
68-70 Blend, 430-435 end point	22¾-23
66-68 Blend, 450 end point	22 -22¾
60-62 Blend, 450 end point	22 -22¾
58-60 Blend, 440-450 end point	22 -22½
74-76 Absorption Gasoline	21½-22½
60-62 Kerosene Blend	16½-17

BURNING OILS

Pennsylvania

45 Water White	14
46 Water White	14½
47 Water White	15½
300 Burning Oil	15½

Oklahoma

42-43	10¾-11¾
44-46	17 -17½
42-43 Distillate	10½-11

NEUTRAL OILS

Pennsylvania

200 Vis. No. 3 Assoc. Filt	35
180 Vis. No. 3 Assoc. Filt	33
150 Vis. No. 3 Assoc. Filt	29

Oklahoma

(Vis. test 70) — Prices, July 26

100 Vis. No. 2 Color	17 -18
200 Vis. No. 3 Color	27 -28
160 Vis. No. 4 Color	24 -25
200 Vis. No. 4 Color	26¾-26¾
200 Vis. No. 5 Color	25½-26

South Texas

(Vis. test 100; cold test 0)

70 Vis. No. 2 Color Unfilt. Pale	17½-21¾
100 Vis. No. 2 Color Unfilt. Pale	18¾-22½
150 Vis. No. 2½ Color Unfilt. Pale	21½-24
200 Vis. No. 3 Color Unfilt. Pale	28¾-31½
300 Vis. No. 3 Color Unfilt. Pale	33½-35¾
500 Vis. No. 3½ Color Unfilt. Pale	41½-43
750 Vis. No. 4 Color Unfilt. Pale	49¾-50½
70 Vis. No. 1½ Color Filt. Pale	22¾
100 Vis. No. 1½ Color Filt. Pale	28½
150 Vis. No. 1½ Color Filt. Pale	32½
200 Vis. No. 2 Color Filt. Pale	37½
300 Vis. No. 2 Color Filt. Pale	42
500 Vis. No. 2½ Color Filt. Pale	46½
750 Vis. No. 2½ Color Filt. Pale	57½
200 Vis. No. 5½ Color Red Oil	29½-30¾
300 Vis. No. 5½ Color Red Oil	31½-33
500 Vis. No. 6 Color Red Oil	36½-38¾

CYLINDER STOCKS

Pennsylvania

600 Steam Refined	46
650 Steam Refined	60
635 Steam Refined	54
600 Flash	66
600 Amber Filtered	60
600 Medium Filtered (D)	70
Cold Test Stocks (bright filtered)	95
Cold Test Stocks (dark filtered)	92

WAX

Pennsylvania

122-124 White Crude Scale Wax, N. Y., lb.	9
124-126 White Crude Scale Wax, N. Y., lb.	9½

Oklahoma

122-124 White Crude Scale Wax	8-8½

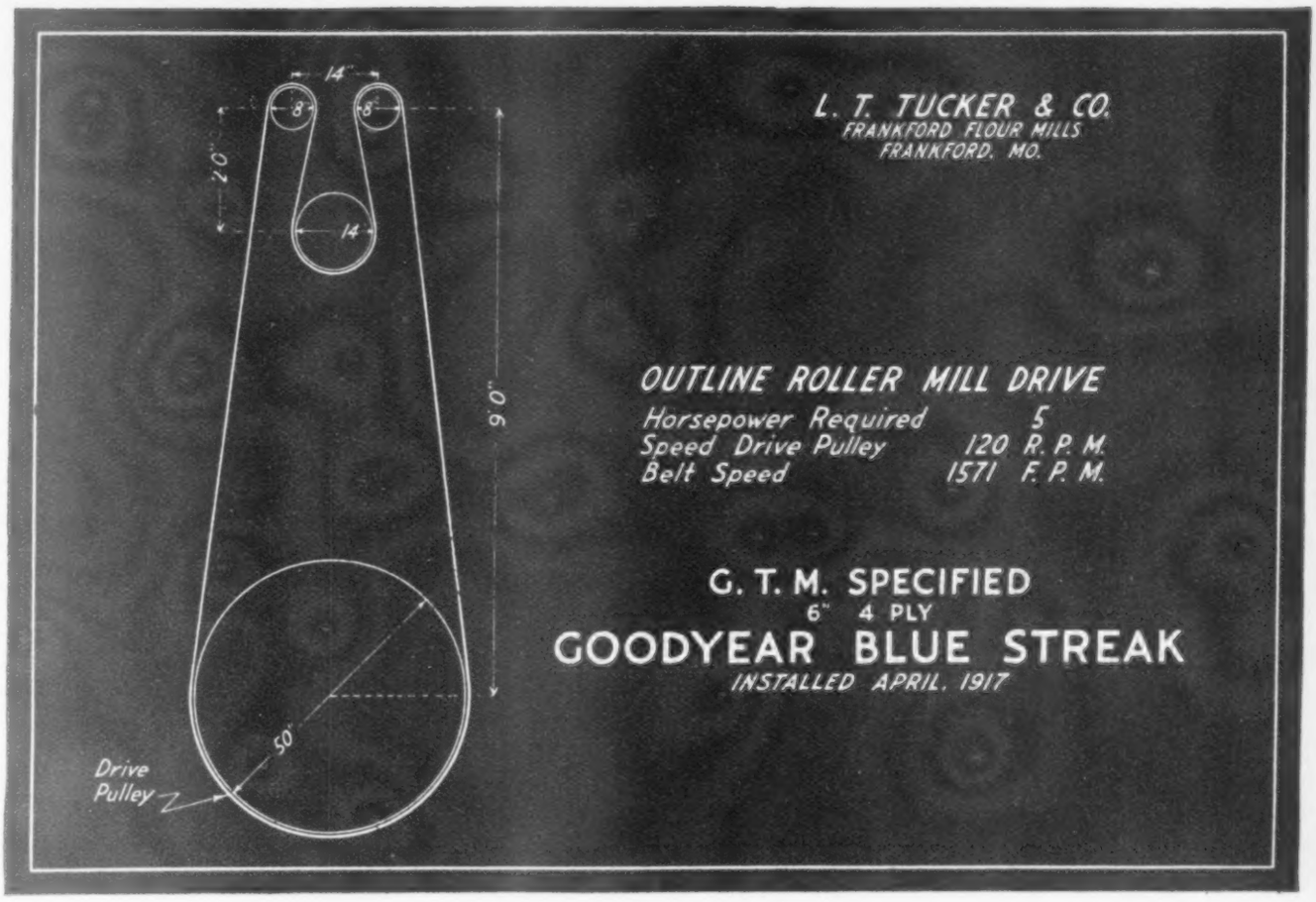
FUEL OIL

Pennsylvania

36-40 Fuel Oil	12½

Oklahoma

32-36 Gas Oil (gal.)	8 - 8½
24-26 Fuel Oil (bbl.)	$3.15-$3.30
Fuel Oil, buyers' cars (bbl.)	$2.60-$2.70



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The Roller Mill Drive—and the G. T. M.

Roll drives in flour mills are pretty much all alike in the strain they impose on belting. They subject both sides of the belt to contact with the pulleys, causing a flexing action that takes the life out of the average belt.

Any unusual duty is a challenge to the G.T.M. — Goodyear Technical Man — and he called on L. T. Tucker & Co., of Frankford Mills, Frankford, Mo., to see if they could not figure out together a way to more economical belt performance, over a longer period of use.

He outlined the Goodyear Analysis Plan by which Goodyear Mechanical Goods are specified exactly to the service required, so that they will not only serve the work more effectively, but contribute their proper share to the profitable operation of the entire plant. He dwelt on the established Goodyear practice of building the belt to the work to be done, with long-run economy always the object in view.

Full co-operation was given the G. T. M. in his study of the details of the drive. The miller supplemented the G. T. M.'s measurements of pulleys, center-to-center distances, and so on, with practical data about the actual running conditions. The resulting specifications first were checked carefully, and a 35-foot, 6-inch, 4-ply Goodyear Blue Streak Belt was installed in April, 1917.

For more than three years now that Goodyear Blue Streak Belt has transmitted power on the straining roll drive without a trace of slippage, and with a minimum of stretch. Fastened with rawhide lace, it shows no sign of wear, has run trouble-free amid the ever-present dust, and has cost almost nothing for repairs. Its sturdiness has assured the fine-milled quality of the flour.

Its operating economy began with its purchase. Though Goodyear Belts usually cost a little more in the first place, this one cost 23% less than the belt it replaced. This fact, and the record it has set for unfailing performance, have brought into different service in the Frankford Mills other Goodyear Belts, each of them specified to its particular work, and all of them uniform in the construction and quality that protect our good name.

You may have a belting problem, involving either a drive or an entire plant, on which the G. T. M. could figure with profit to you. His services are at your command. Write for them, or for further information about the Goodyear Analysis Plan, to The Goodyear Tire & Rubber Company, Akron, O.

BELTING · PACKING HOSE · VALVES

GOODYEAR

disgruntled employes, after the first day.

The principal development in the foreign situation has been the weakening course of sterling, which was attributed chiefly to the indications that the British government was preparing to meet possible contingencies in the Russo-Polish situation. The break in English exchange had a similar effect upon the other markets.

Official foreign trade figures show that the country's aggregate imports and exports for the fiscal year ending June as $13,349,922,711 representing a gain of $3,021,919,957 over the former total, or 21 per cent. Of this gain $2,216,826,623 was in imports and $878,893,445 was in exports.

There have been no new petroleum charters during the week, and the tonnage markets have been generally slow, as a result of the continued difficulty in obtaining coal for export. Rates are easy, especially for steam tonnage.

NEW YORK, July 26.—A feature of the local lubricating market has been the weaker position of cylinder stocks, as a result of heavy offers of western supplies at disturbing prices. The competing oils have been specially treated for the removal of tar and sulphur, which puts them on an effective basis against the Appalachian grades.

The export demand for cylinder oils has slackened, due to the advanced prices and depression in foreign exchange. Foreign buyers are reported to be adapting themselves more freely to the changes in specifications necessitated by the shortage in Appalachian stocks and the increasing part western oils have been playing in the eastern markets.

Standard, California Advances Tank Wagon

The Standard Oil Company of California, effective July 15, advanced the tank wagon price of gasoline at Spokane, Wash., 2½ cents a gallon, bringing the tank wagon price in that city to 30½ cents. At the same time the tank wagon price of kerosene was advanced 4 cents at Spokane to 22 cents.

Effective July 16, the tank wagon price of kerosene was advanced 3 cents a gallon at the following points: Los Angeles, San Francisco, Seattle, Tacoma and Portland. On July 17 the price of kerosene, all grades, all other points in Standard of California territory, and all deliveries was advanced 3 cents a gallon.

The price of gasoline in the Phoenix field of Arizona was advanced 1 cent a gallon on July 20.

The reason for the advances, according to President K. R. Kingsbury, president of the Standard of California, is to meet the cost of importing big quantities of gasoline from the Mid-Continent field to meet the shortage in the company's marketing territory.

Effective July 16, the Standard Oil Company of Louisiana advanced the tank wagon price of gasoline one-half cent a gallon in the state of Louisiana, with the exception of New Orleans. In the latter city the tank wagon price is 28 cents and the filling station price 30 cents. At other Louisiana points the price is 29 cents tank wagon and 31 cents filling station.

Tank Wagon, Service Station Markets

Gasoline and Kerosene

BELOW are given in cents a gallon, service station and tank wagon quotations on gasoline and tank wagon quotations for kerosene as quoted by the Standard Oil Companies, the points at which prices are given being arranged by Standard Oil marketing districts.

	Gasoline Tank Wagon July 26	Gasoline Service Station July 26	Oil Tank Wagon July 26
S. O. NEW JERSEY DISTRICT			
Atlantic City, N. J.	28.5	30.5	17.5
Newark, N. J.	28.5	30.5	17.5
Annapolis, Md.	29.5	31.5	18
Baltimore, Md.	28.5	30.5	17
Washington, D. C.	28.5	30.5	17.5
Danville, Va.	30	32	18.5
Norfolk, Va.	29	31	17.5
Petersburg, Va.	29.5	31.5	18
Richmond ,Va.	29	31	17.5
Roanoke, Va.	30.5	32.5	19
Charleston, W. Va.	29.5	31.5	18
Keyser, W. Va.	30	32	18.5
Parkersburg, W. Va.	28.5	30.5	17
Wheeling, W Va.	29.5	31.5	18
Charlotte, N. C.	30	32.5	19.5
Hickory, N. C.	30.5	32.5	20
Mt. Airy, N. C.	30.5	32.5	20
Salisbury, N. C.	30.5	32.5	20
Charleston, S. C.	29.5	31.5	18
Columbia, S. C.	31	33	19.5
S. O. NEW YORK DISTRICT			
New York, N. Y.	30	32	18
Albany, N. Y.	31	33	19
Buffalo, N. Y.	30	32	18.5
Syracuse, N. Y.	31	33	19
Boston, Mass.	31	33	19
Burlington, Vt.	31	33	19
Bridgeport, Conn.	31	33	19
Hartford, Conn.	31	33	19
New London, Conn.	31	33	19
Providence, R. I.	31	33	19
Augusta, Me.	31	33	19
Portland, Me.	31	33	19

NOTE—The Atlantic Refining Company which markets in part of New England territory advanced its prices one cent a gallon on gasoline May 12 to 30.6 cents tank wagon and 34 cents service station at the following points: Providence, Hartford, New Haven, Worcester and Springfield.

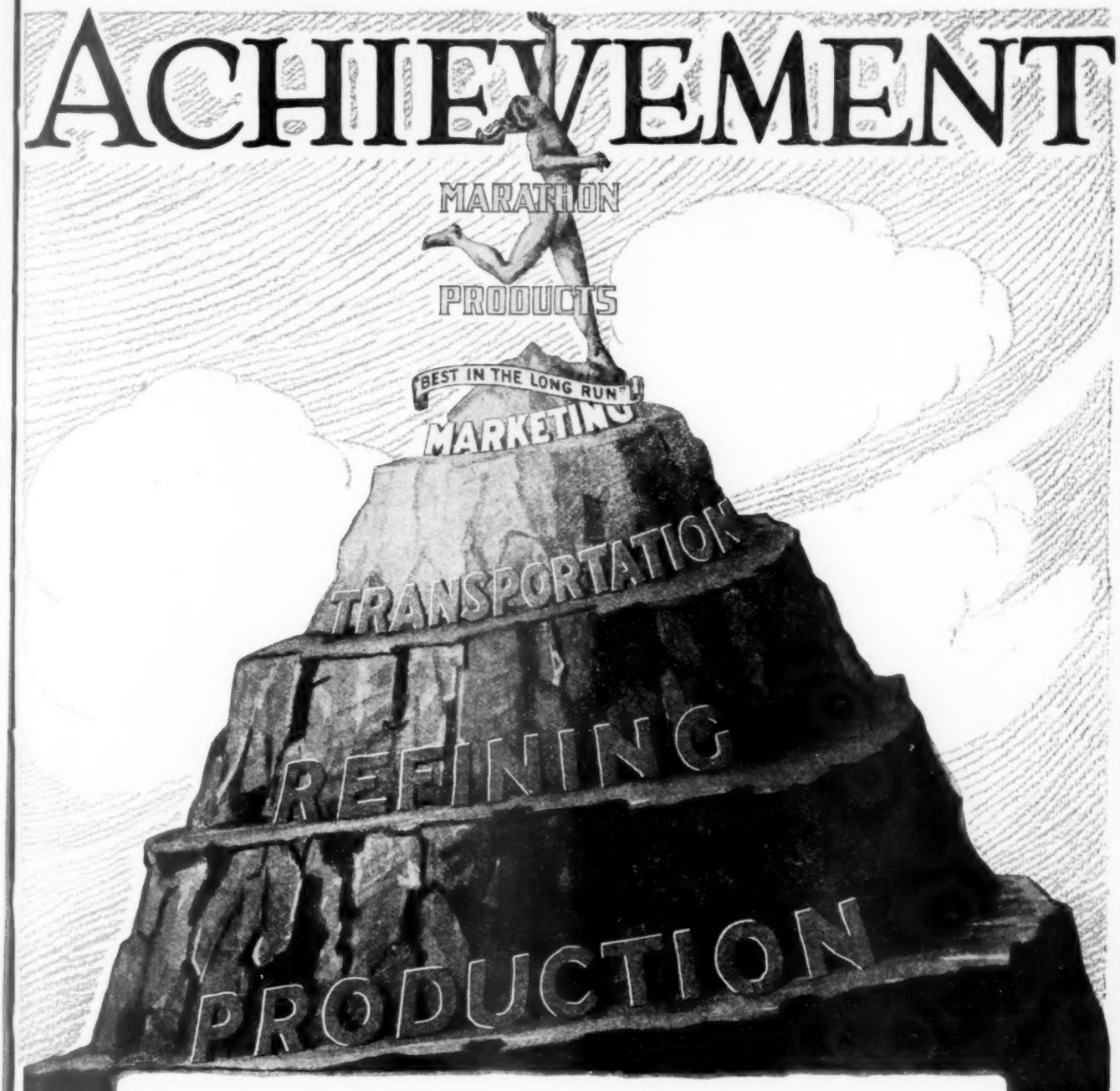
ATLANTIC REFINING DISTRICT			
Pittsburgh, Pa.	29.7	33	20
Philadelphia, Pa.	29.7	33	20
Dover, Del.	29.7	33	20
Wilmington, Del.	29.7	33	20
S. O. OHIO DISTRICT			
Cleveland, Ohio	29	30	20

NOTE: Tank Wagon markets at all points in Ohio are the same as for Cleveland.

S. O. KENTUCKY DISTRICT			
Lexington, Ky.	28	30	20
Louisville, Ky.	28	30	19
Bowling Green, Ky.	29	31	19.5
Jackson, Miss.	28	28	15
Natchez, Miss.	30	30	15.5
Birmingham, Ala.	31.5	31.5	19.5
Mobile, Ala.	28	30	18.5
Atlanta, Ga.	28.5	30.5	20.5
Augusta, Ga.	28.5	30.5	20.5
Savannah, Ga.	28	30	19.5
Fort Myers, Fla.	30.5	32.5	16.5
Tampa, Fla.	28.5	30.5	15.5
S. O. LOUISIANA DISTRICT			
Little Rock, Ark.	31	33	21
New Orleans, La.	28	30	17.5
Shreveport, La.	29	31	18.5
Memphis, Tenn.	30	32	19
Nashville, Tenn.	30.5	32.5	18.5

	Gasoline Tank Wagon July 26	Gasoline Service Station July 26	Oil Tank Wagon July 26
MAGNOLIA PETROLEUM DISTRICT			
Muskogee, Okla.	29	31	20
Oklahoma City, Okla.	28	30	18
Tulsa, Okla.	27	29	19
Fort Smith, Ark.	27.5	29.5	20
Texarkana, Ark.	29	31	20
Amarillo, Texas	30	32	21
Dallas, Texas	29	31	20
El Paso, Texas	30	32	21
Fort Worth, Texas	29	31	20
Galveston, Texas	29	31	20
Houston, Texas	29	31	20
S. O. INDIANA DISTRICT			
Chicago, Ill.	26	28	18.5
East St. Louis, Ill.	27.1	28.1	19.3
Peoria, Ill.	27.3	28.3	19.5
Indianapolis, Ind.	27.3	28.3	19.7
Fort Wayne, Ind.	27.1	28.1	19.5
Bay City, Mich.	28.1	29.1	19.8
Detroit, Mich.	28	29	19.8
St. Louis, Mo.	25.7	28	18.7
Kansas City, Kans.	26.2	27.2	17.6
Topeka, Kans.	27	28	18.2
Wichita, Kans.	26.8	27.8	18.2
Des Moines, Ia.	27	28	18.9
Keokuk, Ia.	27.1	28.1	18.9
Sioux City, Ia.	27	28	19
La Crosse, Wis.	27.8	28.8	19.9
Milwaukee	27.3	28.3	19.1
Madison, Wis.	27.8	28.8	19.2
Minneapolis, Minn.	27.2	29.2	20
Pipestone, Minn.	28.2	29.2	19.9
Aberdeen, S. D.	28.9	30	20.4
Sioux Falls, S. D.	28.8	29.8	19.9
Bismarck, N. D.	31.7	32.7	22.4
Fargo, N. D.	30.6	31.6	21.3
Grand Forks, N. D.	30.8	31.8	21.5
Minot, N. D.	32.3	33.3	23
Bartlesville, Okla.	27.1	29.1	18.5
S. O. NEBRASKA DISTRICT			
Crawford, Neb.	29	29	21
Omaha, Neb.	28.5	28.5	19.75
CONTINENTAL OIL DISTRICT			
Denver, Colo.	31	33	23
Glenwood Springs, Colo	34.5	36.5	26
Pueblo, Colo.	31	33	23
Basin, Wyo.	29	29	20.5
Casper, Wyo.	27.5	27.5	19
Cody, Wyo.	30.5	30.5	22
Cheyenne, Wyo.	30.5	32.5	22
Lander, Wyo.	29.5	29.5	21
Billings, Mont.	30.5	31.5	22.5
Butte, Mont.	32	33	24
Great Falls, Mont.	32	33	24
Helena, Mont.	32	33	24
Miles City, Mont.	32	33	24
Ogden, Utah	31	33	22.5
Salt Lake City, Utah.	31.5	33	22.5
Boise, Idaho	32.5	31	24
Albuquerque, N. M.	31.5	33.5	24
S. O. CALIFORNIA DISTRICT			
Los Angeles, Cal.	23.5	23.5	16.5
San Francisco, Cal.	23.5	23.5	16.5
Portland, Ore.	25.5	25.5	17.5
Seattle, Wash.	24.5	24.5	17.5
Spokane, Wash.	30.5	30.5	22
Tacoma, Wash.	24.5	24.5	17.5

ACHIEVEMENT



Each step in the upbuilding of the
TRANSCONTINENTAL ORGANIZATION
is founded on the rock of ACHIEVEMENT

WE PRODUCE, REFINE AND MARKET

A COMPLETE LINE OF

PETROLEUM PRODUCTS

Thoroughly Dependable!

TRANSCONTINENTAL OIL COMPANY

Long Island City, N. Y. — Pittsburgh, Pa.
Fort Worth, Texas — Tulsa, Okla.
Chicago, Ill. — Des Moines, Iowa
Sioux City, Iowa — Stuttgart, Ark.

Lighter Demand Eases Paraffin Wax Market

NEW YORK, July 26. — The paraffin wax market has developed an easier position as a result of a slackening of the demand, incidental to the season, and the accumulated arrival of goods which had been held up by the freight congestion. With the exception of match wax and the two highest melting point grades, prices have yielded ¼ to ½ cent. Within the last few days the market has been reported steadier in some quarters on improved inquiries. Current prices are:

	Cents per Pound
Crude, 105-108 degrees (match wax)	9½
122-124 degrees	9
124-126 degrees	9¼
Yellow, 122-124 degrees	9
Semi-refined, 124-126 degrees	10½
Refined, 118-120 degrees	10¾
120-122 degrees	11
123-125 degrees	11¼
125-127 degrees	12
128-130 degrees	13½
130-132 degrees	14¼
133-135 degrees	16¼
135-137 degrees	18
138-140 degrees	20

Exports for May and eleven months ending May, of refined and unrefined wax compare as follows:

	Refined Pounds	Value
May, 1920	28,667,493	$ 2,687,937
April, 1920	30,424,324	2,690,214
May, 1919	7,520,317	844,073
Eleven months ending May,		
1920	262,912,585	$24,235,971
1919	173,721,763	18,524,077
1918	151,847,556	12,525,069
Unrefined		
May, 1920	7,440,478	$ 507,805
April, 1920	5,389,995	398,519
May, 1919	7,781,566	772,944
Eleven months ending May,		
1920	65,914,914	$ 4,471,570
1919	51,687,971	4,761,688
1918	74,017,675	4,087,428

The distribution by principal countries of refined and unrefined wax exports for the eleven months' period shows the following:

	Eleven Months Ending May 1920	1919	1918
United Kingdom, lbs.	131,727,226	118,051,559	106,760,765
Value	$10,696,955	$11,580,427	$ 7,176,562
Italy, lbs.	42,823,520	22,079,995	31,969,535
Value	$4,002,269	$2,347,766	$2,304,255
Belgium, lbs.	19,367,509	816,641	13,969,535
Value	$1,656,586	$80,110	$1,138,466
Spain, lbs.	14,864,189	9,230,101	3,994,853
Value	$1,495,012	$907,834	$272,722
Chile, lbs.	9,165,225	9,979,909	14,207,396
Value	$727,112	$1,198,335	$1,232,307
Japan, lbs.	8,280,832	10,262,167	6,375,490
Value	$615,917	$896,529	$367,312

Imports of paraffin wax have been:

	Pounds	Value
May, 1920	377,041	$ 42,591
April, 1920	345,670	30,169
May, 1919	1,221,736	140,721
Eleven months, ending May, 1920	8,656,938	$817,099
1919	4,857,349	550,973
1918	8,997,023	672,518

SHREVEPORT, LA., July 24.—Saturday, August 7, is the date when oil pipe lines in Louisiana will formally become common carriers, according to advices from the state capital, which state that Act No. 76, House bill III, by Representative J. S. Douglas, of Caddo, is being promulgated so that it is to become operative.

The salesman or refinery assistant you have been looking for may be offering his services in the Oil Industry Exchange this week. Better turn to that page near the back of the book.

Crude Production, Consumption and Stocks

As Reported by U. S. Geological Survey

THE column headed Production shows the quantity of oil received from producers by pipe line and other marketing companies and by refineries that receive the crude directly from the well. Figures as to oil consumed on leases and producers' stocks are not included except for California, which include all petroleum brought to the surface

The column headed Delivered to Consumers includes figures on domestic crude petroeum delivered to consumers by pipe lines and other marketing companies.

Stocks include domestic crude held in storage on the last day of the month by pipe lines and other marketing companies. Crude oil delivered to refiners is not included nor is petroleum held in storage by producers on leases. Figures are in barrels of 42 gallons.

Field	Production	Delivered to Consumers	Stocks
APPALACHIAN			
Total, 1919	29,232,000	28,922,000	Jan. 31, 3,882,000
February, 1920	2,087,000	1,976,000	Feb. 29, 3,993,000
March, 1920	2,565,000	2,242,000	Mar. 31, 4,316,000
April, 1920	2,493,000	2,602,000	Apr. 30, 4,146,000
May, 1920	2,488,000	2,513,000	May 31, 4,121,000
LIMA-INDIANA			
Total, 1919	3,444,000	3,442,000	Jan. 31 1,296,000
February, 1920	214,000	305,000	Feb. 29, 1,205,000
March, 1920	266,000	234,000	Mar 31, 1,237,000
April, 1920	254,000	269,000	Apr. 30, 1,222,000
May, 1920	270,000	189,000	May 31, 1,303,000
ILLINOIS			
Total, 1919	12,436,000	10,165,000	Jan. 31, 3,862,000
February, 1920	831,000	789,000	Feb. 29, 3,904,000
March, 1920	992,000	978,000	Mar. 31, 3,918,000
April, 1920	884,000	907,000	Apr. 30, 3,896,000
May, 1920	935,000	1,119,000	May 31, 3,711,000
ALL MID-CONTINENT (Okla., Kans., Central and North Texas, North La.)			
Total, 1919	196,891,000	198,901,000	Jan. 31, 77,326,000
February, 1920	19,213,000	18,819,000	Feb. 29, 77,720,000
March, 1920	20,745,000	20,241,000	Mar. 31, 78,188,000
April, 1920	21,103,000	20,734,000	Apr. 30, 78,470,000
May, 1920	21,100,000	25,590,000	May 31, 78,974,000

Oklahoma-Kansas	Production	Central North Texas	Production
February, 1920	11,510,000	February, 1920	5,175,000
March, 1920	12,757,000	March, 1920	5,405,000
April, 1920	12,307,000	April, 1920	5,064,000
May, 1920	12,609,000	May, 1920	5,639,000

North Louisiana	Production
February, 1920	2,201,000
March, 1920	2,546,000
April, 1920	3,732,000
May, 1920	2,852,000

GULF COAST	Production	Delivered to Consumers	Stocks
Total, 1919	20,568,000	17,417,000	Jan. 31, 12,328,000
February, 1920	1,711,000	2,015,000	Feb. 29, 11,934,000
March, 1920	2,020,000	2,464,000	Mar. 31, 11,489,000
April, 1920	2,031,000	2,272,000	Apr. 30, 11,248,000
May, 1920	2,043,000	2,237,000	May 31, 11,054,000
ROCKY MOUNTAIN			
Total, 1919	20,568,000	17,417,000	Jan. 31, *217,000
February, 1920	1,175,000	1,170,000	Feb. 29, 229,000
March, 1920	1,334,000	1,336,000	Mar. 31, 227,000
April, 1920	1,319,000	1,308,000	Apr. 30, 238,000
May, 1920	1,387,000	1,408,000	May 31, 217,000
CALIFORNIA			
Total. 1919	101,564,000	103,016,000	Jan. 31, 28,253,000
February, 1920	7,974,000	8,873,000	Feb. 29, 27,354,000
March, 1920	8,570,000	9,702,000	Mar. 31, 26,222,000
April, 1920	8,265,000	8,715,000	Apr. 30, 25,772,000
May, 1920	8,636,000	9,155,000	May 31, 25,253,000

*The apparent discrepancy in stocks for the Rocky Mountain district is due to the fact that starting with the month of January, 1920, stocks are compiled by the survey to include crude oil held in storage by pipe line and other marketing companies, whereas they formerly included also stocks held by refineries receiving oil directly from the wells. This reduction in Rocky Mountain stocks is only apparent, the balance being held by refineries there.

Turpentine Maintains Firm Upward Trend

Staff Special

NEW YORK, July 26.—Turpentine has continued on the upward trend in the local market, $1.70 being maintained from yard at the close, a gain of 5 cents for the week. The demand has slackened, but stocks have remained at a comparatively low level. A good inquiry has been reported for export, with cases closing at $1.91, f. a. s., New York. Savannah has been firmer, $1.55, as against $1.50. Glasgow advices note competition in that market on the part of French interests and a good demand for substitutes from Scandinavia.

With the exception of B, which is 25 cents higher on spot at $12.75, the rosin market has developed an easing tendency by 10 to 40 cents. The general demand has been light, and there has been little difficulty in covering it. Savannah was fairly steady, closing at advances of 5 cents on D to and including N and 15 cents on WG and WW. There has been an active demand for rosin oil and with supplies limited, prices are 3 cents higher in the local market at 70 cents for first, 78 cents for second, 89 cents for third and 99 cents for fourth run. Tar holds a firm position at unchanged prices, with a heavy demand for retort and light supplies of kiln burnt.

Linseed oil prices are lower on the continued dulness of the market, with futures more or less unsettled. For July shipment in carlots $1.45 per gallon, barrels, can be done. August-September is nominal at $1.40 and forward months at $1.25. For distant delivery sales are said to have been made as low as $1.15, carlots. According to forecasts of the Argentine ministry of agriculture, 325,000 tons of the 850,000 tons of linseed available for export from the last crop are still awaiting shipment.

Soya bean oil has been slow of sale, but spot prices are nominally steady at 14½ cents per pound for crude and 15½ cents for deodorized in barrels for the usual jobbing quantities. For shipment from the Pacific coast late offers have been on the basis of 10½-10¾ cents in sellers' tanks. Lard and neatsfoot oils have been quiet, but prices have undergone no quotable changes. Refined menhaden oils are weaker on spot at 90 cents for light pressed, 93 cents for winter bleached and 96 cents for extra winter bleached, in sympathy with the crude situation. Buyers are showing no interest in crude at 60 cents in barrels, carlots, Baltimore.

Light soda ash has been freely offered at three cents per pound for prompt shipment from works in single bags; export sales have been reported in double bags at $3.40 f. a. s., but 3½ cents was generally asked in this position at the close.

Spot supplies of caustic soda have been reduced to almost negligible proportions and the market is nominal. At the works six cents per pound is the prevailing quotation for carlots. Export prices are on the basis of 6.40-6.50 cents, f. a. s. Sulphuric acid has been the subject of freer sales and the market is firmer at $24 per ton for nearby delivery.

Refiners' and Jobbers' Supplies

Following are the average market prices for the week on the principal materials used by refiners and jobbers, f. o. b. shipping point as effective July 26, 1920.

Refiners' Supplies

	July 19	July 26
Soda Ash, light, single bags	$3.00 cwt.	$3.00 cwt.
Silicate of Soda 60 deg.	2.90 cwt.	2.90 cwt.
Sal Soda	1.85 cwt.	1.85 cwt.
Caustic Soda, solid—		
Works	6.00 cwt.	6.00 cwt.
New York	6.25 cwt.	6.50 cwt.
Sulphuric Acid, tank cars, f. o. b. sellers' shipping point	22.00 ton	24.00 ton

Jobbers' Supplies

The following prices represent the open New York market in jobbing quantities, unless otherwise specified:—

English Degras	7c lb.	7c lb.
Domestic Degras	6¾c lb.	6¾c lb.
Chloride of Lime	$7.00 cwt.	$7.00 cwt.
Horse Oil	15c lb.	15c lb.
Lard Oil—		
Winter Strained	$1.45 gal.	$1.45 gal.
Extra No. 1	1.25 gal.	1.25 gal.
No. 1	1.20 gal.	1.20 gal.
No. 2 Lard	1.10 gal.	1.10 gal.
Neatsfoot Oil—		
Tallow Oil	1 45 gal.	1.45 gal.
Pure refined	$1.50 gal.	$1.50 gal.
Extra No. 1	1.35 gal.	1.35 gal.
No. 1	1.30 gal.	1.30 gal.
Menhaden Fish Oil		
Light pressed	.95 gal.	.90 gal.
Winter Bleached	1.00 gal.	.93 gal.
Extra winter bleached	1.05 gal.	.96 gal.
Whale Oil		
Extra winter bleached	1.35 gal.	1.35 gal.
Soya Bean Oil	16c lb.	15½c lb.
Linseed Oil, July	1.50 gal.	1 45 gal.
August	1.40 gal.	1.40 gal.
Herring Oil	1.25 gal.	1.25 gal.
Seal Oil	1.75 gal.	1.75 gal.
Rosin B, N. Y.	12.65	12.75
Rosin F, N. Y.	16.65	16 35
**Rosin B	11.50	11 50
**Rosin F	14.85	14.35
Rosin Oil, 1st run	.67 gal.	.70 gal.
Rosin Oil, 2nd run	.75 gal.	.78 gal.
Turpentine, N. Y.	1.65 gal.	1.70 gal.
**Turpentine	1.51 gal.	1.53½ gal.
Pine Tar—		
Kiln Burnt Oil, bbls.	15.25	15.25
Retort Oil, bbls.	15.00	15.00

**Savannah Ga. market

TULSA, July 21.—J. K. Livingston, president of the Livingston Oil Corporation, upon his return from a five weeks' vacation spent in Battle Creek, Mich., discovered that his home had been entered and systematically looted by "vacation thieves." The total loss was estimated by Mr. Livingston as $15,000 or more. In addition to $1,000 worth of Liberty bonds, the loss included expensive tapestries, curtains, rugs, chairs, Victrola and other furnishings.

LEXINGTON, KY., July 26.—The Cra-Tom Oil & Gas Company has bought from the Elk Oil & Gas Company a half interest in the Harry Nickell well and lease, in Morgan county, and also arranged to take over the holdings of the Elk concern on Grassy Creek, adjoining the Nickell lease.

PENNSYLVANIA EST. 1880 PRODUCTS
WAVERLY
All Pennsylvania
Gasolines and Naphtha
Tur-Min-Tine
Gas, Fuel and Road Oils
Engine Distillate
Illuminating Oils
300° Mineral Colza
Steam Refined Cylinder Stocks
Stock Blended Oils
Viscous Neutrals
Non-Viscous Neutrals
Sun DeBloomed Neutral
Black Oil
Refined Paraffine Wax
Turpentine Substitutes
Specialties
BY INVITATION MEMBER OF
BE GUIDED BY THIS FOUNDATION
STRENGTH HONOR QUALITY SERVICE
RICE LEADERS OF THE WORLD ASSOCIATED
NEW YORK, U.S.A.
800 page book all about Oil—Free to Oil Dealers
50 cents to others.
WAVERLY OIL WORKS CO.
Pittsburgh
U.S.A.

Crude Oil Quotations From All Fields

Price Changes From September 1, 1919, To Date

EASTERN FIELDS

Pennsylvania

1919—Sept. 2 +25¢—Nov. 7 +25¢—Dec. 22 +25¢—Dec. 31 +25¢
1920—Jan. 26 +25¢—Feb. 5 +25¢—Feb. 17 +25¢—Feb. 27 +15¢—Mar. 1 +15¢—Mar. 2 +15¢

Cabell

1919—Sept. 2 +10¢—Nov. 7 +15¢—Dec. 22 +25¢—Dec. 31 +15c
1920—Feb. 28 +25¢—May 11 +25c

Wooster

1919—Sept. 8 +10¢—Nov. 21 +25¢
1920—Jan. 12 +25¢—Mar. 1 +10¢—Mar. 10 +25¢

Corning

1919—Sept. 2 +10¢—Nov. 7 +15¢—Dec. 22 +25¢—Dec. 31 +15¢
1920—Mar. 10 +15¢—Mar. 19 +10¢—Mar. 30 +25¢—May 15 +25¢

North Lima

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

South Lima

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Indiana

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Princeton

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Somerset

1919—Sept. 2 +10¢—Nov. 7 +15¢—Dec. 22 +25¢—Dec. 31 +15¢
1920—Feb. 27 +15¢—Mar. 10 +25¢—May 10 +25¢

Ragland

1919—Nov. 7 +10¢—Dec. 22 +25¢—Dec. 31 +15¢
1920—May 10 +35¢—July 20 +25¢

Illinois

1919—Sept. 8 +10¢—Nov. 21 +25¢—Dec. 22 +25¢
1920—Jan. 12 +25¢—Mar. 1 +25¢—Mar. 10 +25¢

Plymouth

1919—Nov. 21 +20¢—Dec. 22 +25¢
1920—Mar. 1 +20¢—Mar. 3 +25c

MID-CONTINENT

Okla.-Kans.

1919—Nov. 19 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Healdton

1919—Feb. 21, reduced 25¢—Nov. 21 +15¢—Dec. 19, +65¢—Dec. 22 +25¢
1920—Jan. 8 +25¢—Feb. 27 +25¢—Mar. 3 +25¢

Hewitt

1919—Dec. 2 +40¢—Dec. 22 +25¢
1920—Feb. 27 +25¢—Mar. 1 +25¢

TEXAS FIELDS

Burkburnett

1919—Oct. 1, reduced 25¢—Nov. 22 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Electra

1919—Nov. 22 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Corsicana Light

1919—Nov. 21 +25¢—Dec. 18 +25¢—Dec. 23 +25¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Corsicana Heavy

1919—Feb. 21, reduced 25¢—Nov. 21 +10¢—Dec. 23 +15¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +20¢

Strawn

1919—Nov. 21 +25¢—Dec. 23 +25¢—
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Moran

1919—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

Ranger

1919—Nov. 19 +25¢—Dec. 20 +25¢
1920—Jan. 5 +25¢—Feb. 27 +25¢—Mar. 1 +25¢

GULF COAST

Spindletop

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 20¢—Mar. 19, reduced 30¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Goose Creek

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Sour Lake

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Humble

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50c

Batson

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Saratoga

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

Dayton

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19, reduced 25¢—Dec. 5 +25¢—Dec. 20 +25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50c

West Columbia

1919—Jan. 14, reduced 30¢—Feb. 3, reduced 25¢—Mar. 19—May 1, reduced 25¢
1920—Jan. 7 +25¢—Feb. 19 +25¢—Mar. 3 +25¢—Mar. 4 +25¢—Apr. 13 +50¢

LOUISIANA FIELDS

Homer

1919—June 7 +10¢—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢

Bull Bayou

1919—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢—Mar. 15 +25¢

Caddo (above 38°

1919—Dec. 3 +25¢—Dec. 22 +25¢
1920—Feb. 28 +25¢—Mar. 15 +25¢

De Soto (above 38°)

1919—Dec. 3 +25¢—Dec. 22 +25¢
1920—Feb. 28 +25¢—Mar. 15 +25¢

Caddo (35° to 37.9°)

1919—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢—Mar. 15 +25¢

Caddo (32° to 34.9°)

1919—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 28 +25¢—Mar. 15 +25¢

Caddo Heavy

1919—Jan. 14, reduced 30¢—Feb. 4, reduced 25¢—Mar. 21, reduced 25¢—Dec. 3 +25¢
1920—Jan. 6 +25¢—Feb. 27 +25¢—Mar. 15 +25¢—May 3 +25¢—May 10 +25¢

Crichton

1919—Dec. 3 +25¢—Dec. 22 +25¢
1920—Jan. 6 +25¢—Mar. 15 +25¢

Pine Island

1919—Feb. 27 +25¢—Dec. 3 +25¢
1920—Jan. 6 +25¢—May 3 +25¢—May 10 +25¢

WYOMING

Elk Basin

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25c

Grass Cree

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25¢

Big Muddy

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25¢

Salt Creek

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Mar. 16 +25¢

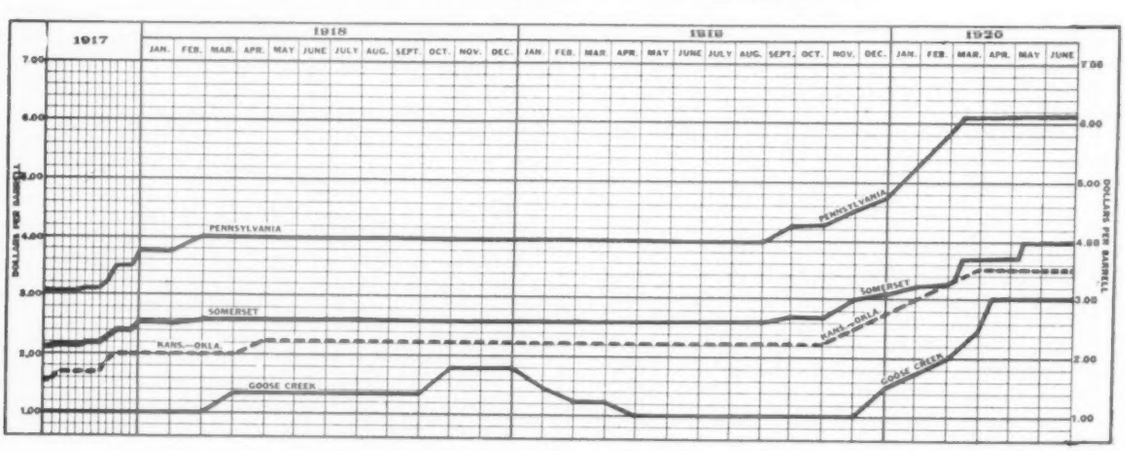
Lance Creek

1919—Mar. 2 +25¢—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13, 25¢—Mar. 16, 25¢

Rock Creek

1919—Nov. 21 +25¢—Dec. 23 +25¢
1920—Jan. 13 +25¢—Feb. 4 +10¢—Mar. 2 +15¢—Mar. 16 +25¢

Price Trend of Principal Crudes Through June, 1920



Crude Oil Prices

EASTERN FIELDS

	July 12 1920	Jan. 1 1920	Jan. 1 1919
Pennsylvania	$6.10	$5.00	$4.00
Cabell	4.17	3.27	2.77
Wooster, O.	4.05	3.35	2.58
Corning	4.25	3.35	2.85
North Lima	$3.73	$3.13	$2.38
South Lima	3.73	3.13	2.38
Lodi	4.00	3.13	2.38
Indiana	3 63	3.03	2.28
Princeton	3.77	3.17	2.42
Somerset	4.00	3.40	2.60
Ragland	2.35	1.70	1.25
Illinois	3.77	3.17	2.42
Plymouth	3.48	2.98	2.33
Canadian Petrolia	4.13	2.78	2.78

MID-CONTINENT

Kans.-Okla.	$3.50	$2.75	$2.25
Healdton	2.75	2.00	....
Hewitt	3.50	2.75	....

TEXAS FIELDS

North Texas

Burkburnett	$3.50	$2.75	$2.25
Electra	3.50	2.75	2.25
Corsicana light	3.50	2.75	2.25
Corsicana heavy	1.75	1.05	1.30
Strawn	3.50	2.75	2.25
Moran	3.50	2.75	2.25
Ranger	3.50	2.75	2.25

Gulf Coast

Spindletop	$3.00	$1.50	$1.80
Goose Creek	3.00	1.50	1.80
Sour Lake	3.00	1.50	1.80
Humble	3.00	1.50	1.80
Batson	3.00	1.50	1.80
Saratoga	3.00	1.50	1.80
Dayton	3.00	1.50	1.80
West Columbia	3.00	1.25	1.00

LOUISIANA FIELDS

Homer	$3.25	$2.50	....
Bull Bayou	3.15	2.40	....
Caddo, above 38°	3.50	2.75	$2.25
De Soto, above 38°	3.40	2.65	2.15
Caddo, 35° to 37.9	3.40	2.65	2.15
Caddo, 32° to 34.9	3.35	2.60	2.10
Caddo, heavy	2.50	1.25	1.55
Crichton	3.00	2.25	1.75

WYOMING

Elk Basin	$3.10	$2.10	$1.85
Grass Creek	3.10	2.10	1.85
Big Muddy	2.75	1.75	1.50
Salt Creek	2.75	1.75	1.50
Lance Creek	3.05	....	....
Rock Creek	2.75	....	....
Wyoming Black	1.75	....	....

CALIFORNIA

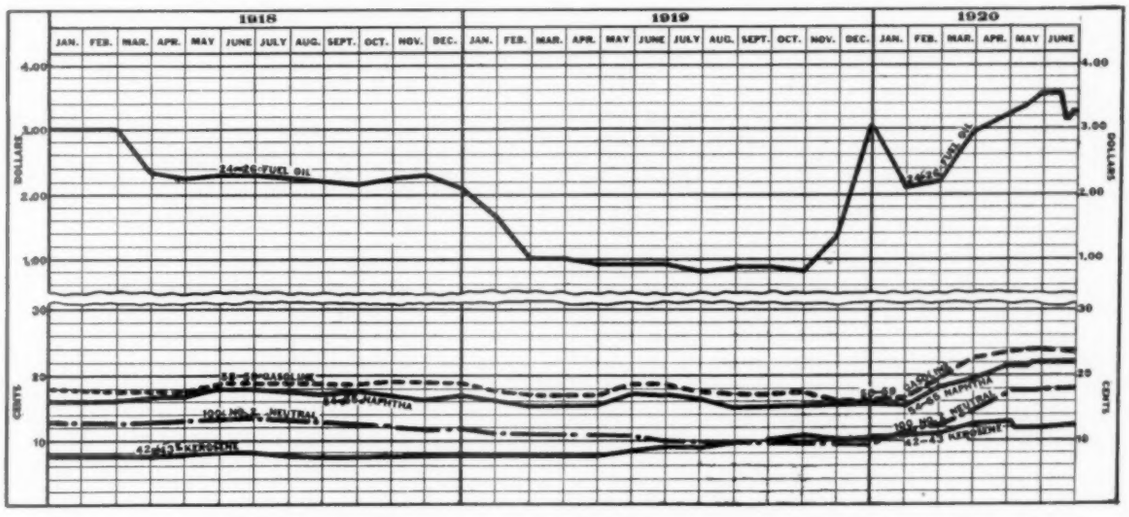
Effective January 30, the Standard Oil Company offered a new price schedule for crude at the well, the new schedule varying widely from the old one in effect since June 10, 1919, and advancing prices for higher gravity crudes very materially over the old figures, and to new record high levels for the California fields.

Effective March 17 the Standard of California advanced all grades in oil fields 25 cents a barrel over prices announced Jan. 31. Effective July 10 the Standard advanced all grades in all fields 12 cents a barrel. Prices July 12 are as follows:

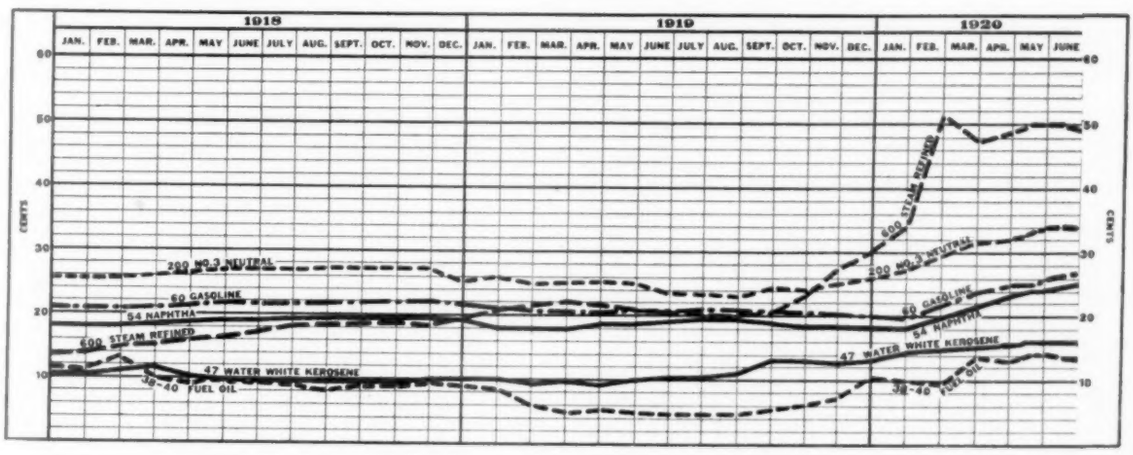
SAN JOAQUIN VALLEY AND WHITTIER-FULLERTON FIELDS

14 deg. to and including 17.9	$1.60 bbl.
18 deg. to and including 18.9	1.61 bbl.
19 deg. to and including 19.9	1.63 bbl.
20 deg. to and including 20.9	1.66 bbl.
21 deg. to and including 21.9	1.70 bbl.
22 deg. to and including 22.9	1.75 bbl.
23 deg. to and including 23.9	1.81 bbl.
24 deg. to and including 24.9	1.88 bbl.
25 deg. to and including 25.9	1.96 bbl.
26 deg. to and including 26.9	2.05 bbl.
27 deg. to and including 27.9	2.15 bbl.
28 deg. to and including 28.9	2.25 bbl.
29 deg. to and including 29.9	2.35 bbl.
30 deg. to and including 30.9	2.45 bbl.
31 deg. to and including 31.9	2.55 bbl.
32 deg. to and including 32.9	2.65 bbl.
33 deg. to and including 33.9	2.75 bbl.
34 deg. to and including 34.9	2.85 bbl.
35 deg. to and above	2.95 bbl

Refinery Prices at Oklahoma Plants



Refinery Prices at Pennsylvania Plants



OIL FINANCE

Oil Stocks Resist Bear Attacks

THERE was a great deal of backing and filling in the stock market during the week, but no real progress was made toward recovery. Sugar and steel stocks were the especial object of bearish attacks. No prominent selling movement followed, however. Oil issues led the market in several spirited forward swings, and furnished the only real point of interest. But the advances ran the usual course: Short covering followed and prices declined to previous low levels.

Among the stocks to show firmness in the face of pressure were Simms Petroleum, General Asphalt, White Oil, Mexican Petroleum and Pan-American Oil & Transport. Simms Petroleum rose to 17, a high point since its tumble of several weeks ago. A generally steady tone prevailed in the lower priced oils. The general influences affecting the market were favorable rather than otherwise.

The railroad wage decision hardly awakened comment, and its only effect was to cause traders to mark time until the action of the men was made known. Meanwhile general business conditions continue good. There is no getting around the law of supply and demand. Oil, steel, coal and building production is far below requirements. Money is tight, but there is no proposal to exact rigid deflation. Great enterprises are going forward by leaps and bounds, and even a presidential election is not a seriously disturbing factor.

Net Profit Of Gilliland Company For Six Months Period $1,265,995

Gilliland Oil Company's report of operations for the six months ended April 30, 1920, shows gross income of $4,562,049, which, after deduction of general and administrative expenses of $167,648, and reserves for depreciation and depletion and federal taxes of $2,676,381, drilling expenses, etc., of $452,024, leaves a net profit of $1,265,995.

These net earnings, after deduction of liberal reserves for depreciation and depletion are equivalent to an annual rate of over $60 a share on the preferred stock, or after allowing for the full preferred dividends, to an annual rate of over $5 a share on the common stock.

Depreciation and depletion in the six months was at an annual rate of over $122, per share of preferred stock outstanding or over $11 per share of common stock outstanding. Depletion reserves were equivalent to 50 per cent of the gross value of oil produced.

The company's production was 1,509,948 barrels of oil in the six months, or at an average daily rate of 8,388 barrels. This average rate of production has been maintained since April 30.

The value of the company's fixed assets as of October 31, 1919, was $15,487,405, while on April 30 the value was $18,846,919, a net gain of over $3,350,000.

The book value of the equity in the common shares has increased from $33.50 on each of the outstanding 400,000 shares as of September 30, 1919, to $38 a share on each of the 444,406 shares outstanding as of April 30, 1920, despite the liberal appropriation for depreciation and depletion, which amounted to an annual rate of in excess of $11 per share of common stock. As of April 30, current assets in excess of current liabilities amounted to $2,143,847, of which $1,847,473 was reported as cash.

Since its issue in January, 1920, the amount of preferred stock outstanding has been reduced from the original amount of $5,000,000 to $4,164,700 by conversion of $595,300 and redemption of $240,000 of the total. In the increase of the amount of common stock, 11,906 shares were for conversion of the preferred and 32,500 shares for acquisition of new properties.

On October 31, 1919, the company had 234 oil wells and 13 gas wells. Since that time there have been added 53 oil wells and 2 gas wells. Six dry holes were drilled during that time. On April 30 there were 46 wells drilling, several of which have been completed as producers since that time.

The amount paid in cash for active leases during the six months' period was in excess of $1,500,000 and for inactive leases, more than $400,000. The company now owns and operates 7 casinghead gasoline plants which are producing at the rate of 20,000 gallons daily, and another plant is being constructed in the Homer field. One hundred tank cars have been purchased for the transportation of this product.

Lucey Corporation Issues 8% Notes

Offering of $1,500,000 ten-year 8 per cent convertible notes, series "A," is announced as soon to be issued by Lucey Manufacturing Corporation, one of the largest manufacturers of oil well drilling equipment in the world. The notes are dated July 1, 1920, due July 1, 1930, interest payable January 1 and July 1, without deduction for normal federal taxes not in excess of 2 per cent. The issue will be in coupon bonds of $500 and $1,000 denominations, registered as to principal only.

Earnings of Lucey Manufacturing Corporation for the year 1919 made more than six times the interest charges, says the announcement of the forthcoming issue, and for the last three years made more than five times the interest charges. For the first four months of 1920 the earnings were more than nine times the interest requirements. Net tangible assets are given as more than 300 per cent and the net current assets as more than 210 per cent of this new issue.

The following terms of the issue are announced:

Callable upon thirty days' notice in amounts of $100,000 or more for redemption, and in smaller amounts for the sinking fund:

(a) at 105 and accrued interest, the right to convert running for thirty days after date of call, or

(b) at 115 and interest on any interest date, the right to convert ceasing upon notice of call at this price.

The trust agreement securing these notes will provide that:

(a) The company agrees to maintain at all times net current assets equal to at least 150 per cent of its funded indebtedness.

(b) While any of the notes are outstanding, neither the company, nor any of its subsidiaries, will issue any securities maturing later than one year from date of issue, other than purchase money obligations, without ratably securing these notes.

(c) $2,500,000 have been authorized, but the remaining $1,000,000 notes may be issued only if the net tangible assets of the company are at least 200 per cent of the notes outstanding and those proposed to be issued, and if the consolidated net earnings of the company for the preceding year shall have been at least 2½ times the interest charges plus the sinking fund on all notes outstanding and proposed to be issued.

(d) There shall be an annual sinking fund (first payment July 1, 1921,) of 5 per cent for the first five years and thereafter of 7½ per cent of the largest face amount of notes at any time issued.

Convertible into Class "A" stock at the rate of one share of stock for each $55 face amount of notes. Callable at 105 and accrued interest, with right of conversion to run thirty days after date of call.

Callable on any interest date at 115 and interest without right of conversion.

There are outstanding 37,500 shares Class "A" stock (par value $50), which is entitled, before any dividend may be paid on Class "B" stock, to receive dividends of $5 a share for each of the three years ending July 1, 1923, and $8 a share for each year thereafter. After Class "B" stock has during any one year received dividends equal to the rate being paid on Class "A" stock, the two classes will participate share for share in further dividends declared during that year.

In the event of liquidation, Class "A" stock will be entitled to receive $50 a share, and accrued dividends before any distribution is made on Class "B" stock.

Class "A" stock will be convertible, unless called, at $80 per share and accrued dividends, into Class "B" stock, share for share.

Class "A" stock will be callable, in whole or in part, upon thirty days' notice for redemption, at $66 per share, plus accrued dividends, the right to convert running for thirty days after notice of call for redemption; or at $80 per share plus accrued dividends, the right to convert ceasing upon notice of call for redemption.

Class "A" stock cannot be called while any of the notes are outstanding.

Seven Years Of Steady Growth For Indian Refining Company

In a statement issued June 22, 1920, President Theodore L. Pomeroy of the Indian Refining Company gives the following summarized financial history of the company, covering the past seven years:

	Aug. 31, 1912	Dec. 31, 1919
Liabilities		
Bonds, car trust notes and mortgages	$ 4,195,074	None
Capital stock	6,000,000	$6,000,000
Current liabilities	3,485,705	2,801,318
Miscellaneous liabilities	50,773	None
Total liabilities, not including reserves	$13,731,553	$ 8,801,318
Assets		
Current assets	$ 2,170,942	$ 7,007,570
Capital assets after reserve for depreciation, (depreciation reserve Aug. 31, 1912, none; Dec. 31, 1919, $1,942,596)	5,694,441	7,202,141
Deferred and suspended assets, etc.	1,511,231	124,873
Total	$ 9,376,614	$14,334,585
Deficit, 1912	4,354,939	.....
Surplus, 1919	.....	5,533,266
Less reserves for taxes, exhaustion of oil deposits, etc.	.....	3,364,951
Final surplus, 1919	.....	$ 2,168,315

During the period under consideration dividends were disbursed to stockholders in the sum of $2,452,500.

Mr. Pomeroy continues: "Crude oil from the properties owned by the company is less today than it was in 1912, but the value of the producing properties is far greater. Despite declining production, however, an ample supply of crude oil has been obtained and is assured for a considerable period by favorable contracts. The amount on hand December 31, 1919, was 582,407 barrels, against 119,713 barrels in August, 1912. While the company may continue to supply its requirements of crude oil by contract, it is very desirable that increased production be acquired and much attention has consequently been given during the last few years to the strengthening of its organization in the crude oil department, and the company is at the present time conducting considerable drilling operations, most of which are in proven territory, altho some prospecting is being done."

The refinery at Lawrenceville, Ill., it appears, has been greatly enlarged and modernized and has now a capacity for the treatment of over 13,000 barrels of crude oil per day as against approximately 8,000 per day capacity in 1912.

The company has now 161 local distributing stations in 30 states as against 119 stations in 1912. The value of sales of refined oil in 1912 was $6,321,518, and in 1919 was $22,026,766. Tank cars owned number 1,497, mostly of 8,000 gallons capacity, as against 1,009 in August, 1912.

The Central Refining Company plant, adjoining the Indian's Lawrenceville refinery, which has recently been acquired by cash purchase, marketed during 1919 approximately 37,000,000 gallons of refined oil. For this capacity it has adequate storage and tank car facilities. It obtained about one-third of its crude oil requirements from its own producing properties in and near Lawrence county, Ill., and purchased the balance from producers in the same territory on favorable contracts. Its sales were substantially made to jobbers, as it was practically without a distributing organization. This distributing system is now to be supplied by the Indian Refining organization. Since the first of the year the capacity of the Central refinery has been largely increased. Operated as a unit, the overhead of the two companies will not be materially greater than the Indian Refining's is at present. Furthermore, Indian Refining, in order to supply the orders taken by its existing distributing organization, is compelled at present to buy in the open market refined oil in addition to that which it can itself manufacture. The product of the Central refinery would largely obviate this necessity. Moreover, Central refined oil can be sold to consumers instead of to jobbers, thus saving an intermediate profit.

An outline of Indian Refining Company's refinancing plan has already appeared in the columns of **National Petroleum News.**

Financial Notes

Shell Transport.—Net profits for 1919 were (on the basis of $4 to 1 pound) $18,833,480, against $11,087,612 in 1918.

Royal Dutch.—Net profits for 1919: $40,000,000, compared with $29,020,505 in 1918. Dividends paid in 1919 were 45 per cent.

World's National Debt.—Is now $265,000,000,000, compared with $44,- before the world war.

Banks Well Fortified.—John Skelton Williams, comptroller of the treasury, at Maine Bankers' Association: "I believe that the banks of our country, both national and state, are now fully prepared to meet any strain or shrinkage in business."

Oil Helps Banks.—It is stated that the Commercial National Bank of Shreveport, La., has deposits of $20,000,000, 80 per cent of which is due to oil and gas development in northern Louisiana.

Producers & Refiners.—April net earnings, $403,750, compared with $52,500 in April, 1919, a gain of 675 per cent. Increase over March, 1920, $29,750.

North Persia Oilfields Co., Ltd.—Has been formed by Anglo-Persian Oil Company to work the remaining five provinces in Persia not heretofore included in its concessions. Anglo-Persian now controls all of Persia. Capital of new subsidiary is $15,000,000.

Tide Water Oil.—Early listing of the new $8,617,400 stock is reported. Included in this amount is $2,000,000 stock offered to employes. Total outstanding stock will then be $41,704,000 out of $100,000,000 authorized.

Galena Signal Oil.—Suit has been entered against company for $116,000 alleged to be due John A. Wilson as commissions on oils sold to railroads.

Service in OIL SECURITIES

For the purpose of keeping investors advised regarding the status of oil securities, we issue regularly the following literature which may be had upon request:

Standard Oil Booklet

containing complete information on each of the companies in this group.

Independent Oil Booklet

containing authoritative data on companies whose securities are actively traded in.

Weekly Summary

containing the latest information available each week affecting the oil industry and values of oil securities.

CARL H. PFORZHEIMER & CO.

Dealers in Standard Oil Securities

25 Broad Street New York

How Oil Shares Moved Last Week

NEW YORK STOCK EXCHANGE

	Par Value	High 1920	Low 1920	Week's Sales	Price July 17	Week's High	Week's Low	Price July 23	Week's Gain or Loss
Caddo Oil & Refg	$100	28¼	15¾	500	18½	18½	16¾	16¾	—1¾
California Petroleum	100	46	26	2,500	33	33½	30½	30½	—2½
Mex. Petroleum	100	222	161	30,500	195½	197	187½	189½	—5½
Middle States Oil	10	71¾	22¾	18,500	31¾	32	20⅞	20⅞	—10⅞
Pure Oil Co	25	50⅞	37	No sales reported.					
Okla. Prod. & Refg	5	5¾	3⅜	8,600	4¾	4¾	4	4⅜	—⅜
Pan.-Amer. Petroleum	50	108½	88¾	49,200	106	107¾	100¾	101	—5
Pierce Oil Corp	25	23¼	15	1,700	.....	15¾	14⅜	15¾	.....
Royal Dutch, N. Y	13.15	123¾	74	23,000	113	113⅜	†74	74	—39
Shell Transport	10	90¾	70½	3,400	76½	76½	†70⅜	70¾	—6¼
Sinclair Consol	No par	48¾	28¾	16,700	31¾	32¼	29¾	30	—1¾
Standard Oil, N. J	100	850	625	Odd lots	.....	646	633	644	.....
do. pfd	100	113¾	100⅛	3,900	.....	105⅜	105¾	105¾	.....
Texas Company	25	231	166⅜	29,700	47⅜	48	45¼	45¾	—2¾
Transcontinental Oil	No par	38¾	13¼	10,600	16¾	16¾	14	14⅜	—2¼
Union Oil	No par	38	27	14,400	31	31⅞	30½	31⅜	+⅜

†New low.

NEW YORK CURB MARKET

Cities Serv. Bkrs	10	44¾	35	8,300	36⅜	36¾	35⅜	35½	—1⅜
Cosden & Co	5	10¼	6⅜	No sales reported.					
Elk Basin	5	11¾	7½	600	.....	7¾	7½	.....	.....
Federal Oil	5	4¾	2¾	5,300	2⅜	2⅜	2¼	2⅜	.....
Glenrock Oil	10	3⅜	1⅜	13,100	2½	2½	2¼	2⅜	—⅛
Guffey-Gillespie	No par	39¼	26	100	28	28	28	.....	.....
Houston Oil	100	151	57	No sales reported.					
Intern. Petroleum	5	77	33⅛	2,600	35	35¼	33½	33¾	—1¼
Invinc. Oil Corp	50	47	27	No sales reported.					
Island Oil & Trans	10	8	4¼	No sales reported.					
Merritt Oil	10	22⅛	14	2,000	16¼	16½	15¾	15⅜	—⅜
Midwest Refg	10	180	121	3,175	149	158	149	154	—5
Pennock Oil	10	9½	5	2,000	.....	5¼	5½	.....	.....
Phillips Petroleum	No par	89½	30¼	No sales reported.					
Prodrs. & Refrs	10	10½	6¾	2,100	.....	7	†6¾	.....	.....
Sapulpa Refg	5	7¼	5½	No sales reported.					
Salt Creek Prod	25	56	30½	2,600	31¾	36⅞	34¾	.....	.....
Simms Petroleum	No par	73½	14	23,200	15¾	17	14¼	15⅜	+⅜
White Oil	No par	50	17½	5,500	19	19¼	18	19	.....

†New low.

PITTSBURGH STOCK EXCHANGE

Arkansas Nat. Gas	10	45	11¾	5,070	12	13½	11¾	12¾	+¾
Arkansas Nat. Gas, pfd	100	150	92	No sales reported.					
Barnsdall Corp, A	25	50¾	39	30	40¾	41	41	41	+½
Guffey-Gillespie Oil	No par	40	25½	.....	28½	No sales reported.			
Kay County Gas	1	2⅜	1⅛	1,400	1¾	1⅝	1⅝	1⅝	.....
Lone Star Gas	25	45½	25	427	28	28½	28	28⅛	+⅛
Man. Light & Heat	50	61¾	49¾	818	50	50¾	49¾	49⅞	—⅛
Marland Refining	5	6½	4	1,350	4⅜	4½	4¾	4¾	+⅛
Ohio Fuel Oil	1	34⅞	22½	330	23	23	22½	23	.....
Ohio Fuel Supply	25	55	44	686	49	49	48¾	48¾	—¼
Oklahoma Nat. Gas	25	43	31	790	31½	31⅜	31	31	—½
Oklahoma Prod. & Refg	5	6½	4	No sales reported.					
Pittsburgh Oil & Gas	5	16	11	150	14	14¼	13¾	13¾	—¼
Union Nat. Gas	100	130	117½	10	119½	119	119	119	—½
Barnsdall Cor	25	46	36	100	.....	38	38	38	.....
Arkansas Gas rights	.....	5	⅞	9,104	1⅜	1½	1	1	—⅛

PITTSBURGH CURB MARKET

Allied Oil	1	1.25	.24	200	.25	.25	.25	.25	.....
Atlantic Gulf Oil	5	88½	79½	No sales reported.					
Boston-Wyoming	1	1.25	.62	1,000	1.00	1.12	1.12	1.12	+.12
Columbia Syndicate	10	11	8¾	No sales reported.					
Duquesne Oil	5	7½	3¾	640	3⅞	3⅞	3¾	3⅞	.....
Homer Union Pet	1	1.25	.20	600	.25	.25	.20	.20	—5
Liberty-Texas	100	1.75	.65	250	.....	.65	.65	.65	.....
Gulf Oil Corp	100	475	400	.....	455	No sales reported.			
Lou-Penn	1	3¾	1½	No sales reported.					
Marshall Oil	10	13½	10	No sales reported.					
Mexico-Wyoming	1	1.45	.55	700	.60	.68	.60	.68	+8
Omar Oil & Gas	10	7¼	3¼	1,600	3¼	3½	3¼	3½	+¼
Salt Creek Consol	10	21	13½	No sales reported.					
States Oil	5	160	125	No sales reported.					
Tropical Oil	25	23	16½	80	19	19	19	19	.....
Twin City Oil	1	.30	.15	2,250	.16	.17	.15	.16	.....

Standard Oil Stocks

Standard Oil securities are dealt with to only a small extent on the New York curb market, the great majority of sales being made over the counters of investment bankers. For this reason no record can be obtained of the total volume of sales from day to day to indicate the activity of any particular stock. Below are bid and asked quotations prevailing on the curb market at the close of business on the date given, the same quotations prevailing in the majority of unrecorded transactions:

STANDARD OIL GROUP

	July 23 Bid	July 23 Asked	1920 High	1920 Low
Anglo-American	21½	22½	31	19
Atlantic Refg	1,150	1,200	1,650	1,150
Buckeye Pipe	85	87	102	84
Continental Oil	120	130	(b)575	530
Galena Signal	42	45	97	40
Illinois Pipe	155	160	178	100
Ohio Oil	280	285	395	270
Penn.-Mex	40	44	74	38
Prairie Oil & Gas	560	575	690	520
Prairie Pipe	198	202	280	190
South Penn	265	270	345	265
S. O. California	308	313	338	305
S. O. Indiana	665	680	760	640
S. O. Kansas	510	530	750	510
S. O. Kentucky	370	390	485	350
S. O. New York	372	377	460	280
S. O. Ohio	425	450	560	420
Union Tank Car	110	114	115½	103
Vacuum Oil	370	380	435	330

(b) Before stock dividend.

UNLISTED SECURITIES

By Carl H. Pforzheimer & Co.

	Par Value	July 23 Bid	July 23 Asked	1920 High	1920 Low
Gulf Oil Corp	$100	440	450	550	394
Humble O. & R	100	240	260	323	240
Magnolia Pet	100	360	380	450	360
Tex. Pac. C. & O.	10	6¾	6½	139	40¾

MISCELLANEOUS STOCKS

The following are bid and asked prices ruling at the close of business on the date given, on the stock markets indicated by reference marks, with high and low levels reached so far this year:

	Par Value	July 23 Bid	July 23 Asked	1920 High	1920 Low
Cities Serv. (a)	$100	329	323	....	....
Cit. Serv. pfd. (a)	100	66	66½	74	64
Nat. Refg. (a)	100	220	233	*410	355
do. pfd. (a)	100	116	120	126	97
N. Am. O. & R. (b)	5	2¾	3	....	....
Paragon Refg. (a)	25	25¼	....	27½	25
do. pfd. (a)	100	....	97	100½	100
Indiahoma Rfg. (c)	5	7.25	7.50	....	....
Marland Refg. (c)	5	4.37½	4.50	....	....

*Before stock dividend. (a) Cleveland. (b) New York Curb. (c) St. Louis.